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REHABILITATION LITERATURE

National Society for Crippled Children and Adults

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Books for review and correspondence relating to feature articles and other editorial matters should be addressed to the editor. He will welcome your suggestions.

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REHABILITATION LITERATURE

Article of the Month

The Patient's Motion Ability: Evaluation Methods, Trends, and Principles

Mary Eleanor Brown, M.A.

About the Author . . .

Miss Brown received her B.A. from Barnard College in 1931, her M.A. in physical education in 1941, and her physical therapy certificate in 1945, both from New York University. Her work in physical therapy grew out of her early interest in physical education and dancing. She studied the Dalcroze dance method in Europe and the modern dance under Martha Graham in New York; she studied and taught for over two years Mensendieck and other methods of posture and relaxation (Todd-Bates-Sweigard, Jacobson). Her first contact with the disabled was with cerebral palsied adults in a special laboratory course, at New York University under Lulu E. Sweigard, Ph.D., in 1940. Miss Brown has received advanced training both in the United States and in Europe. Among the many places and agencies where she has worked in physical therapy, rehabilitation, teaching, and research are the Institute for the Crippled and Disabled, New York University, State Rehabilitation Hospital, West Haverstraw, N. Y., National Society for Crippled Children and Adults, Eastern New York Orthopedic Hospital School, Schenectady, N.Y., and St. Vincent's Hospital, New York City. For the past two years she has been Chief Research Associate for the Western Reserve University-Highland View Hospital Hand Research Project.

This original article was written especially for Rehabilitation Literature.

Part 1 of Two Parts

THE TITLE of this article means the study of the patient's movements during daily life and work (*motion ability, motor ability, motor status*); the way these are established (*methods*); the way workers are applying, extending, and improving them (*trends*); and guides to evaluation (*principles*).

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Section A concerns *methods.* A physical therapist confronted with evaluating his patient usually thinks about taking inventory of his daily

(Continued on page 48.)

†See *Bibliographies* as explained in box on p. 47.

What This Article Is

THE AIM of this article is to stir interest in cultivating the evaluative turn of mind. The article is for students and workers who evaluate patients with motion impairments. I speak as a physical therapist and use examples from physical therapy. For instance, I refer to physical therapy references on tests and measurements,[92, 93] and on research,[95] knowing that each profession has its own body of basic literature. I employ brief explanations in order to interest those who are not physical therapists. I believe the worker's evaluative turn of mind is the foundation for blending professional services for the welfare of the patient.

The article is the outcome of my experience as a teaching physical therapist in a university and as a practicing physical therapist in a variety of clinical settings, including hospitals, schools, public health services, rehabilitation centers, and doctors' offices. It is also a partial review of references indexed in *Rehabilitation Literature 1950-1955* and in monthly copies of *Rehabilitation Literature*, as well as references from my own library. I chose those articles dealing with diseases and situations with which, through day-to-day operational work, I am thoroughly familiar and about which I have definite convictions. Sometimes I added references to clarify a subject mentioned, because, even though they may not be specifically on the subject of evaluation, they relate to its development. An example is the group on kinesiology,[40-44] the science of human movement.

Bibliographies

Actual reviews or even simple comment upon all the 242 references cited in this article would be too long. Therefore, the references are grouped by subject within the outline of the article itself and appear immediately after the parts they supplement. Numbered references (a total of 108) are those to which specific reference is made in the article itself. Though numbered consecutively, they retain their places among the references not specifically cited. Thus the subject continuity of the bibliographic outline is preserved. The 27 single-starred (*) references are notable (to me) for their clear, practical, useful, forceful, far-reaching, valid, and/or original impact upon the subject of evaluation. The 10 double-starred (**) references are not only notable but are also representative of what I consider scientifically oriented work. Review-type material (9 references) is marked *R* and textbook-type (8 references), *T*. References numbered 67 to 108 will be found in Part II, to be published in the March, 1960, issue of *Rehabilitation Literature*.

What This Article Is Not

THIS ARTICLE does not pertain to the following types of patients, with whom my experience has not been especially concentrated: those with impaired vision, hearing, and speech, the brain-injured, the mentally retarded and defective, and those with acute and chronic pulmonary disease, cardiac disturbances, and low-back conditions. Psychosocial references are not included, except insofar as they pertain, in my estimation, to the motor status of the patient. The article does not cover strictly medical evaluation material, such as neurological and pre-employment examinations, unless it relates to the subject being discussed. It does not consider the employee on the job who becomes disabled (workmen's compensation), job placement of the disabled, and the disabled employee on the job.

Some of my favorite subjects that I believe fundamentally affect the quality of patient evaluation are not included, or are only incidentally mentioned. Among these subjects are: definitions and discussions of the various professional fields supplementary to medicine, such as physical and occupational therapy, their common grounds and distinguishing features; teamwork aids to patient evaluation, for instance, who is doing what; evolution of interprofessional understanding, as I have suggested for student physical therapists and student nurses;[8] work simplification applied to basic operations, as I once did for the whirlpool bath[96] (the dental profession is now doing this to provide better dental services to patients,[97] as are homemakers as an outcome of home evaluations[71]); evaluation of equipment, as exemplified by an article on wheel chairs[15] and by one on the design of equipment for crippled children;[16] safety, the subject of two articles;[13, 14] and records as the basis of research,[98-100, 80, 81].

activities (1), judging his muscle strength (2), and checking his range of motion at joints (3). Physical therapists differ as to which is most important and should be done first. My own practice is to search for more than the patient's daily activities, muscle strength, and range of joint motion. I distinguish between daily life activities and daily work activities, stressing the former but including an acute awareness of the patient's work potential (4) in the operational environment I create for my own work.

Section B concerns *trends*. The increase in home evaluation (1) is to me the leading trend, for the facts of the situation are obtained at the start and practical therapeutic goals and an effective therapeutic program can be formulated from them. I seek a total-person evaluation scheme (2), as do others. I am not constituted to study diseases (3) but rather patients. I consider physical fitness (4) necessary to every human being whether well or with defects. Our methods do not yet lend themselves to scientific evaluation of therapeutic response (5). I believe comprehensive evaluation can be only as good as the proved procedures used to derive it, hence the heading Quantitative Evaluation (6). Section C contains 20 *evaluation principles* for use as guides to acquiring the evaluative turn of mind. Section D lists 10 *summary highlights,* concluding with a student's appeal to evaluate his patient in his own way.

Introduction: Evaluation

EVALUATION to me as a physical therapist is the appropriate term for describing efforts to judge the motion ability of patients. Tests and measurements tend to imply that precise, concrete, numerical information can be obtained beyond what is the actual case. Evaluation to me is a clinical word. It includes all available valid, objective, and reliable data, such as can be provided only by true tests. More than that, it embraces all information with facts clearly distinguished from subjective remarks. Evaluation has a positive content of value and force. The word also holds for me the "tempered optimism" that one author[20] says "is based on objective evaluation of the patient's disability and on the likelihood of his overcoming it, partially or completely."

Evaluation to me means becoming saturated with the facts of the existing situation, writing them down, arranging them in a systematic way, studying them for relationships, and summarizing them in perspective. The purpose of evaluation is to provide the groundwork for a therapeutic plan, including an exercise and activity program. But it is so much more! It is also the opportunity to try to get to know another human being very well. It is also the privilege of helping that other human being experience those daily activities he can do, down to the most elemental, such as pulling up his own bedcovers. It is also being at the side of that other human being as he masters each new skill and, himself, earns his independence. The medical fields provide different professional approaches. Yet it is the unique personal contact of each individual worker with his patient that is an indispensable ingredient of successful evaluation.

Learning to evaluate. The physical therapy student learns early how to evaluate his very knowledge by asking, "Who says the muscle does such and such, and how did he find out?" "Who says a crutch should be this or that height, and how was this determined?" "What is the purpose of this specifically prescribed procedure?" As the schools foster the questioning attitude, the evaluative turn of mind, the factual approach, the student learns how to evaluate his patients. The student learns to collect information systematically, group it, study it. The student learns to write a clear report with summary and recommendations. Physical therapists have the right and responsibility to evaluate their patients in their own terms and within their own professional field. Physical therapists shield their patients from the discouragement of too early sitting, standing, and walking by preparing their patients for each succeeding activity. Physical therapists communicate to their patients their confidence in the sequence of graduated activities that they have selected because they evaluated their patients in their own terms and within the proper scope of physical therapy. Physical Therapist Ruth U. Mitchell, in stressing evaluation in the home, says, "If you are not prepared to spend the time and effort to evaluate a patient's home fully and down to the last pertinent detail, just don't bother." The same can be said of any phase of evaluation.

A. FOUR METHODS OF EVALUATING PATIENTS

1. The Patient's Daily Activities: Evaluation

DAILY LIFE activities are those everyday acts a person customarily does in order to live and breathe, exclusive of any kind of daily work activities, such as hobbies, housework, leisuretime activities, and jobs. This is my own definition. When a fresh young new graduate physical therapist of today is asked what daily activities mean to him, he is likely to say, "Oh, you mean an ADL form?" Of course, I do not. In fact, the profusion of "ADL" forms has done much to denude the subject of its vital essence. Even such a commonplace daily life activity as turning one's body to one side becomes an athletic accomplishment when the power to move is limited:

> You could not see the man on the mat because of doctors and other spectators, but you could hear him grunting with effort. You elbowed your way through and there he was, over six feet of him, but you would have had to measure him lying down because he can't stand up. You noticed his fragile, wasted fingers and how at every effort his legs got rigid

> and seemed to impede what he was trying to do. Then, you don't know how, but he was over on his stomach and face, and congratulations and applause rang out. You tried to remember. It was something like this. He had locked his hands one inside the other by interlacing his fingers, pushed one elbow down on the mat, and used his head and neck for all they were worth to accomplish this half body roll. "After three months of many trials daily," you heard. Quite an acrobatic feat for a man with a broken back and spinal cord injury up in the neck part with practically no power left anywhere except above his injury! . . .[1]

One inventory containing 100 items[2] has the following groups of activities: speech; bed, including toilet; bathing and grooming; dressing and undressing; wheel chair, including toilet; bathtub; appliance; locomotion upright (level, incline, step); standing-to-sitting and sitting-to-standing, including toilet; and traveling upright. An example of a daily activity is the act of arising from a chair, that is, moving from a seated position on a chair to a standing position in front of it ready to move somewhere else.

If a patient is paraplegic, he may not have sensation below his waist and might just as well be suspended in a cloud, with no lower extremities at all to his knowledge unless he looks down at them. If he is hemiplegic, he may feel sliced down the middle and might just as well not have his paralyzed side hitched on at all: he may not feel it except when it hurts and it may be very much in the way. To the disabled person, a burned matchstick in the path of his crutches may seem like a piece of lumber and a crack in the floor like an earthquake fissure[2] and the street curb to be descended like a precipice.[6] Often the patient literally does not know which daily activities he can do and which he cannot do. A daily activity inventory provides an organized check list of the major daily activities and allows the basis for a program of teaching.

Nowadays there are many work sheet forms, some rather unclear versions of others. Some are not well constructed, do not have clear headings, are roughly typed or mimeographed, are unattractive, have no keys, instructions, or summaries, and are difficult to interpret. Two inventories have full instructions.[2, 3] Each new author believes he will make this vast subject clear once and for all, but it does not happen. The foremost problem to the new form maker is which daily activities to list. I may think such acts as blowing one's nose and making change should go on the list. Someone else believes gargling in the morning and cleaning fingernails are important for the list. A third includes lighting a match and smoking a cigarette. Others put in movements and exercises that are only parts of daily activities. Still others list work activities, such as operating hasp and padlock, setting a table for a meal, and turning on the stove. Play activities are on the first known published list.[4] One article[7] goes into classroom activities, such as standing at a blackboard and the use of other schoolroom tools.

Once an inventory of daily activities has been chosen as a guide, there is the variation in surroundings. The basic daily activities of self-care, locomotion, and the use of the hands do not change greatly from place to place in our culture, but the building features, furniture and fixtures, and daily routines are very different. For instance, tables and chairs in a house are not the same as those in a school, and a house is made differently from the way a school building is made. Then there are churches, department stores, theaters, offices, and factories, each with different entrances and exits, seating arrangements, and rest room facilities. There is the hospital cubicle with its high, specially made bed with cover cradle, footboard, overhead bars and trapeze, its hard-to-reach bedside cabinet with bedpan and washbasin, its adjustable overbed table for eating, and sometimes much other special and unfamiliar apparatus.[8]

How can we coach crippled children and adults to perform their daily activities with ease in this wide variety of environments?

The experience[5] in 1949 and 1950 at one of the best schools for crippled children illustrates the need for the essential materials for teaching daily activities. Here large numbers of children were collected by the school buses that were backed up to a gigantic platform. The back opened so there were no steps to go up and down. There were no steps in the school but only ramps. There were no beds, bathtubs, cups, saucers, glasses, scissors. What can be of greater worth than to provide the common situations for teaching children the daily activities of the real world of their own homes? Such is the guarantee against depriving crippled children during their school days of their chances for future independence.

In 1951 we drew up the specifications for a Daily Activity House containing the major styles of construction features and many varieties of furniture, with illustrations clipped from *House Beautiful*. What materialized was a Daily Activity Apartment at Sunnyview Hospital, Schenectady, N.Y. Highland View Hospital, Cleveland, has spacious, fully equipped bathrooms, bedrooms, kitchens, and living room. These provide for daily activity inventories and teaching all day long. The patient is taught activities to help him toward safe independence in the hospital and in his own home. Adjoining this hospital's gym is an outdoor area for locomotion practice on uneven terrain, such as hilly lawn, brick and gravel paths, and sand. At New York State Rehabilitation Hospital a practice travel tour on bus and train is available for patients who have demonstrated their walking and climbing skills in the gym and out of doors.[2] New York state pioneered a program for disabled drivers.[13] In the 1940's a university

did not admit a worthy student because he was a "fire hazard." Much greater interest is being shown today for the handicapped college student.[9] Now the University of Illinois has a special curriculum for the severely disabled and, according to its prospectus, has placed in positions (as of June, 1958) every one of its 125 graduates. To fit future students for such opportunities, their early schooling and therapy can include familiarity and mastery of the most common of daily activity situations. The tool for the daily activity program is evaluation by means of the daily activity inventory.

In 1949 the writer took her 100-item daily activity inventory to Arnold Gesell, M.D., at Yale University, to the Merrill-Palmer Nursery School, Detroit, and to the Nursery School Department at Cornell University. The consensus at that time was that in its present form it was a practical list, and that to subject it to test-making procedures would be too expensive and long-term to serve the needs at that time. It was used by the New York State Department of Health in its cerebral palsy program in 1949 and 1950.[5]

An unceasing critic of his own program, which emphasizes daily activities, Mieczyslaw Peszczynski, M.D., asks the following questions: Does the patient need daily-activity testing and teaching? If so, is there a need to check so many daily activities? Can we infer that if one is done, a group of 10 or 20 are similar enough so that they may be considered possible? Are the daily-activity results obtained with the patient better if specific forms are used, as compared with the individual methods of individual therapists? Do we need a statistically standardized daily-activity test? Should the patient's therapeutic success or status be judged by his daily-activity achievements? Or should the patient's attainment rest upon the degree of life "motivation" salvaged?[62] Or should the patient's accomplishments be gauged by whatever irreversible injury there may be to his perceptual powers?[19]

As a whole, opinion expressed in recent references is largely in favor of a valid, objective, and reliable daily activity test.

On January 27, 1959, an independent living bill "To provide evaluation of rehabilitation potentials and rehabilitation services to handicapped individuals who as a result thereof can achieve such ability of independent living as to dispense with the need for expensive institutional care or who can dispense with or largely dispense with the need of an attendant at home . . ." was introduced in the House of Representatives of the 86th Congress (H.R. 3465) by Representative Elliott and in the Senate of the United States (S. 772) by Senator Hill. As of June 12, 1959, these measures were pending before the Senate and House Labor Committees. This independent living bill is characteristic of pending legislation[22] designed to expand and improve evaluation services to persons who at the time of referral to governmental agencies are not fit for vocational pursuits. The likely passage of such a bill alone justifies the development of valid, objective, and reliable evaluation procedures for measuring the satisfactory performance of independent living requirements.

Until we have a truly valid, objective, and reliable daily activity test, a suggested method is to choose a daily activity inventory scheme, with instructions, that has been used extensively and to teach the method to all workers in a program. The inventorying and teaching of daily activities call for training of the apprentice, laboratory kind. Because the predicaments of the disabled cannot be imagined, one is obliged to become intimately familiar with them at first hand. There is no way other than to put on braces and learn how to use crutches.[21] Intraining courses in daily activities for physical therapists and nurses,[8] including students in clinical practice education, justify themselves by unlocking the enthusiasm of young professional workers. Together the trainees are alerted to the value of taking inventory before attempting to teach daily activities to patients. They are shown safe[14] and consistent technics. The meaning of a truly independent performance is clarified for them so there is no need for disagreement. Through understanding daily activities by experience, they learn what each other's duties are in the patient's daily activity program.

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2. The Patient's Muscle Strength: Evaluation

LET THE READER touch his fingertips to his shoulder-tips, bending his arms sharply at the elbow. Now let him resist by holding tightly while someone applies manual force to pull his forearm out of this position. A judgment is made as to strength. Often the main motions are checked quickly in this fashion all over the body, or simply some especially important ones, such as hand and finger grip and straightening the leg at the knee while seated. A systematic work sheet (range and strength inventory)[72] lists the main motions and allows rough grading.† Another author supplies a "screening muscle

†See "Inventory-Evaluation," Part II, this article in March issue.

test."[26] These are short cuts for getting an initial subjective overview of the patient's strength.

It is the patient's strength we are trying to judge—but are we? If he were to raise various dumbbells of different weights, he would be using mechanical resistance instead of manual. However, suppose he could not even begin a movement, much less raise a weight. Movement, no matter how slight, is so precious that appraisal of very fine gradations is needed. An example of capitalizing on tiny movements is the development of the McKibben muscle now being used for severely disabled hands and fingers. A small amount of movement, at the knee, for instance, can release the carbon dioxide that energizes the artificial muscle to move the fingers.[17, 18]

Manual muscle examination. I am dividing this subject into manual and nonmanual muscle examination, the division being particularly pertinent to the bibliography. The two manual methods[23, 24] in common usage today in this country were based upon earlier pioneer work completely described by Williams.[25] (Muscle and joint measurement is reviewed by Salter[48] of England.) The crux of manual muscle examination is whether or not a part can be moved while lifting its weight against gravity. If it can, manual resistances are used; if it cannot, the part is supported. I challenge the use of the concept of "gravity," since it has been noted in practice that, if resistance beyond the weight of the part is offered, a response can sometimes be felt in muscles that apparently do not become activated when called upon to lift that part.

"The Gravity Factor in Grading" of the Kendalls[23] represents a compromise. They repeat the common assumption that "the weight of the part is so small in comparison with the strength of the muscle that the effect of gravity is unimportant."[23 (p. 10)] They divide extremity muscles into two classes, 40 percent (finger, toe, and forearm rotator muscles) being tested without regard to the gravity factor and the rest with the use of it, because it "remains an important factor." Another principle upon which they have based their grading is that "the muscle strength required to hold the test position against gravity will usually perform the arc of motion against gravity."[23 (p. 13)] These authors are expert therapists, renowned teachers and writers, and subtle observers. If some of their findings are subjective, they deserve laboratory investigation.

Returning to the test of muscle strength given the reader, if a person cannot even begin to raise his fingertips toward his shoulder, perhaps he can if the weight is supported for him by someone else, by resting it on his smooth desk or a polished, powdered board, or by suspending it in a sling. In the case of a patient, change of position is sought to allow the same relationship of fixed and moving parts. He is placed in a side-lying position with a smooth board holding the weight. He is graded according to degrees moved and also by muscle flickers seen and/or felt.

Manual muscle examination technics have served highly trained expert physical therapists effectively. Yet even with the graphic texts[23, 24] with the positions clearly shown, there continues to be great variation in purpose, practice, and use. Students avidly request experience in this technic; new graduates often flounder because they believe they have not had sufficient practice; staff therapists plead for workshops to clarify many clinical points; supervisors long to put into practice new points of method appearing in the literature and also to review technics that easily slip away from one under the burden of administrative duties; earnest groups attempt purposeful studies only to discover the muscle examination methods do not hold up;[27] some doctors may acquire the habit of prescribing muscle examinations that are time-consuming and ineffective in terms of application to the particular patient's actual needs. If a muscle examination is worth doing and worth the price charged the patient, then it merits a purpose clearly stated, professional preparation and execution, a concise summary, and a thorough study.

Sometimes the physical therapist finds that the patient cannot even be placed in any of the beginning positions necessary for manual muscle examination and that many hours of trial and error reveal no clear information at all. Physical Therapists Zausmer,[28] Brunnstrom,[38, 39] and Brown† show how they meet such situations.

Manual versus nonmanual muscle examination. Fifty years of painstaking clinical work with patients who desperately needed help, often under epidemic conditions, have provided the manual muscle examination. A scientist[31-33] now scrutinizes it "to evaluate objectively, through direct experimental procedure, the kind and amount of error involved in clinical muscle testing as currently practiced. . . .By 'error' here is meant the amount of difference between a presumed entity and the actual existent as measured. I do not mean that the examiner made a mistake which could have been avoided, excepting the extent to which the method itself imposed a limitation upon what the examiner could do. . . . Properly applied stabilization is indispensable to measuring the full force of primary actions and to relieve stresses, which frequently are painful in themselves, in joints and segments distal to the action being measured."[32]

"It was recognized almost immediately that the usual muscle testing positions were inadequate and that when using such methods one could not obtain measurements that would truly represent normal maximum forces for the action. . . ."[31] Experiments "brought out strikingly the total inadequacy of the subject's body mass and counterforces to stabilize against primary joint motions for most of the actions being studied. Consequently . . . detailed attention was given to developing technics of artificial stabilization. . . . The manual muscle test grading

†See "Inventory-Evaluation," Part II, this article in March issue.

segregated classes of patients as 'normal' for whom the force measurements revealed a condition that was approximately 50 percent normal. . . . The great majority of polio patients in this sample who were assigned the manual grade N in reality had 50 percent loss in knee extensor force. . . . It is now apparent that in manual test grading any response may be graded normal if the patient resists whatever level of force the therapist applies as a criterion for judgment. . . ."[31]

"The clinical methods employed in rating ankle plantar flexion relative to normal simply do not give the faintest idea as to the reality found by quantitative methods. . . . The conception that the gastrocnemius muscle is 'ruled out' of action by flexing the knee 90 degrees is definitely invalid. . . . The ratio of plantar flexion force to body weight as a dysfunction of age is probably the one single outstanding discovery from the present analysis. . . . The over-all impression . . . is that throughout life, body weight is very closely associated with the amount of plantar flexion force expected normally. . . . This procedure is a powerful estimator of the plantar flexion system in health and disease. . . . It is seen that the criterion of five tiptoe rises can be accomplished by patients having only 40 to 45 percent of average normal plantar flexion force, as measured in the standard sitting position. . . . This means that we can expect body weight to serve as one of the more important factors in estimation of expected force."[33]

The nonmanual scientifically applied physiologic laboratory technic of ergography[34-37] offers a "series of self-contained, ink-writing ergographs . . . for the appraisal of the functional capacity of the major articulations of the upper extremity."[35 (p. 6)] It has been possible to indicate initial functional capacity, work tolerance, progress under treatment, the end point of effective rehabilitation, and the degree of residual disability.

The Kendalls report performing manual muscle "tests" on a thousand so-called normal persons and several thousands of patients.[23 (p. ix)] By 1955, 32,000 manual muscle examination blanks were distributed by the National Foundation for Infantile Paralysis.[24] In Dr. Beasley's laboratories ". . . more than one million muscle tests have been performed and over 3,000 subjects, including patients and normal individuals, have been studied in detail."[32 (p. 604)] "A total of 2,101 muscle tests were completed by 66 physical therapists who covered 130,000 miles in the selected areas of 44 states and 3 Canadian provinces included in the Poliomyelitis Vaccine Field Trial of 1954."[30 (p. 82)] The number of detailed manual muscle examinations done by physical therapists since the early development of the field of work in 1912 must be many millions, representing possibly two to three times this number in hours of painstaking work.

By contrast the promotion and use of muscle "testing" is out of proportion to its actual scientific and practical value. The practical results to the patient of a muscle examination, in present-day common practice, often do not warrant the time spent. One is easily swayed by the *wish* for a precise muscle test, succumbing to the nice neat ring of the words themselves, which sound as if a wealth of important knowledge will be gained.

The muscle examination has been reported to hold up under special circumstances to a certain extent[29] when it was found to have a better degree of reproducibility than was the case in most other clinical and laboratory examinations. In the writer's opinion, the results of the muscle examination, as presently used, are not sufficiently repeatable to serve either as a research tool or as clinical documentation other than of the most subjective kind. Manual muscle examination technics are of value as kinesiologic teaching aids. By affording practice to therapists, doctors, and investigators, interest is fostered the better to unravel the mysteries of the science of movement. More research may lead to a more widespread development and use of quantitative muscle strength evaluation and exercise to improve the health and physical fitness of all.

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3. The Patient's Range of Joint Motion: Evaluation

EVERYONE IS likely to experience restriction of motion at joints. The reader may learn how severe a handicap this can become by placing his hands on the desk palms up. Imagine not being able to turn the palms down and trying to pick up a pencil. Such was the predicament of one of my sheltered workshop patients who had had poliomyelitis in the 1930's. Restriction at either one or both of two small joints between the two forearm bones (the radioulnar joints) can largely be responsible for such a disability.

A joint is a space between two or more pieces allowing movement of the pieces with respect to one another. The human body has over 200 bones and many more joints. The rib cage alone has over 100 places where there can be motion if the breathing apparatus is activated fully. There are uniaxial, biaxial, triaxial, and polyaxial joints.

Excursions at joints are further influenced by ligaments, tendons, muscles, and other connective tissues that protect, surround, and cover the joints. Because of the variability of these structures, even so-called normal ranges of motion vary.

Few physical and occupational therapists, orthopedists, and physiatrists escape the dream of finding a clear procedure for positioning the patient and his limb to be measured, placing the angle-measuring device (goniometer) over the joint, putting the limb through its motion arcs, and reading off the degrees. As in testing muscles, it is a beautifully simple idea but not so easy to execute: It is as full of pitfalls as muscle examining and daily activity rating. Range of motion studies have been reviewed.[45, 48] The subject has received laboratory investigation.[45-47] The American Medical Association has published a special issue that considers range of motion.[49]

The indication for checking range of joint motion lies in the patient's actual need for it. Other evaluations and therapy may suit his condition better. For three reasons this procedure has particular application to the severely disabled, such as the patient with four paralyzed extremities: He may be too sick to have any other form of evaluation so that the range of motion check becomes therapeutic itself; prevention of stiffened muscles and joints with attendant deformities and tissue deterioration may rest upon the determinations of range of joint motion; the successful movement of the patient by others may also depend upon these results.

The shoulder joint is a polyaxial (ball and socket) joint. It allows great excursions of motion in many planes and around many axes. Such ranges are difficult for artificial limbs to reproduce. It has been found that one particular position of the upper extremity at the shoulder joint gives the artificial limb user optimal control of his limb.[51] This is one of the practical outcomes of a "Dynamical Analysis of the Shoulder, Arm and Hand Complex," as studied by an engineer.[50]

Although range of joint motion measurement is not wholly scientific, it does serve as a subjective gauge. It serves as a basis for useful and simple exercise routines. It also provides practice for those learning and investigating the subject of kinesiology.[40-44]

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4. The Patient's Work Potential: Evaluation

DAILY WORK hinges upon certain essentials of daily living; this is brought out at Highland Shop, Inc., Cleveland. An interesting student project, in process and incomplete, seeks to predict work skills from daily activity achievements.[52] Minimal gross daily activity accomplishment as obtained on admission is related to daily work estimates as obtained by the Thomasat. The Thomasat is "an individually administered, timed test designed to evaluate psychomotor skills which are important in determining the work level of individuals with long-term disabilities."[53-57]

Three Prevocational Evaluation "Systems." Three prevocational evaluation "systems" emerge. By "system" is meant a connected set of integrated procedures involving research and practical trial, especially developed to meet wide usage and presented in printed format for educational purposes. The *first* is the Veterans Administration's Prevocational Evaluation by a director of tuberculosis rehabilitation.[58] This contains principles applicable to the evaluation of any physical disability. "Light Mechanics Procedure" outlines "a standard set of industrial operations which can be carried on within a hospital or clinic, providing a wide range of job situations with a minimum of equipment, material and personnel. . . . It is designed to include the basic industrial processes which are generally found in manufacturing small tools, instruments, gauges, electrical appliances, toys, firearms and similar products."[58 (p. 3)]

The *second* is the "TOWER System," the product of 40 years of experience of the Institute for the Crippled and Disabled,[59] a vocational training school for disabled where comprehensive rehabilitation was pioneered and continues to be developed, practiced, and taught. "TOWER" stands for "Testing, Orientation, and Work Evaluation in Rehabilitation." It is based upon the "job

or miniature sample method of constructing an achievement test." Over 100 sample work-task "tests" evolved over 22 years by evaluating 5,000 handicapped people simulate actual work tasks and industrial situations, thus providing for "reality testing."

The *third* is Highland Shop's Prevocational Evaluation in Chronic Disease.[60-62] This sheltered workshop in a 750-bed chronic disease hospital dedicated to care, treatment, and research aims to develop tools, such as testing media for evaluation and guidance of the more severely handicapped and aged disabled patients, and to provide patients with appropriate opportunities to earn money and/or participate in a productive milieu. This is a five-year research project begun January 2, 1956, with a staff of 11 and a clientele of between 45 and 53. The clients have severe physical disabilities, a mean intellectual capacity 10 points lower than comparable normal groups, a mean of seven years of formal academic training, often poor English facility, often poor work history with no skills, and often a history of antisocial behavior predating disability.

Prevocational Evaluation of Crippled Children. I believe that the early education of crippled children should include a motor-work skill program requiring the appraisal and development of motor work potentials.[63-65] Daily activity skills, such as undressing, dressing,[2, 72, 10, 11] eating, and getting from place to place, are learned best in childhood. Just as these are needed early by crippled children, so are daily work skills, such as measuring, ruling, cutting, pasting, filing, alphabetizing, wrapping packages, and opening and answering mail. Many of the overwhelming lacks of the cerebral-palsied adult can be obviated by drilling him in advance on job elements.[63, 64] Crippled children need daily activity teaching with attention to self-help clothing,[10, 11] grooming, and etiquette[66] in a prevocationally oriented curriculum that can provide a multitude of fascinating work skills as they are applied in the world of work of today. In one school, children enjoyed their lessons in ironing, gardening, caring for small animals, shining shoes, helping in a corner grocery store, and doing newsstand work.[64, 65]

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(To be concluded in the March issue.)

Research Report

Industrial Recovery for Hemiplegics (An Interim Research Report)

James A. Howard, Ph.D., Harold B. Warren, M.D., and Frank J. Kirkner, Ph.D.

THE PRESENT STUDY concerns itself with the pioneer research attempt in the retraining of the hemiplegic and restoring him to industry as a production worker. Now in its third year, this research is sponsored by the Office of Vocational Rehabilitation, The Heart Association of Long Beach, and Community Rehabilitation Industries, a transitional workshop for training and placing of all groups of physically disabled. It is the purpose of this paper to acquaint physicians with some of the preliminary findings.

This report is of an OVR Special Project which is being conducted by Community Rehabilitation Industries, Inc., 1438 E. Anaheim St., Long Beach 13, Calif. Dr. Howard is the director of research and rehabilitation services; Dr. Warren, an orthopedic surgeon in private practice, serves as consultant to the project; and Dr. Kirkner, chairman of the research committee, is chief of clinical psychology and coordinator of vocational counseling service, Long Beach Veterans Hospital.

In even large practices or most general hospitals, the number and variety of hemiplegically disabled persons seen by most physicians are limited. Also, the primary emphasis is given to the medical task—that of preserving and insuring life. This emphasis is crucial, but it frequently restricts the knowledge of a fourth treatment phase—the preparation of the individual patient to take up again the economic responsibility for the life that the physician has maintained.

Since with the hemiplegic we do not deal with a disease or unitary disorder, we are not meeting a standard condition. We have rather a condition of residual impairment limiting the individual's capacity to meet a competitive work situation. At discharge to home care, hemiplegics have usually made the major gains of physical recovery. With capacity in activities of daily life, the patient is held at maximum benefit and released—as he should be. Our study is concerned with what happens to the man from this point forward. The U.S. National Heart Institute indicates that about 3 of 10 are able to return to work in some capacity.[1] The segment of the hemiplegic population of concern in this study is the remaining 70 percent.

As the first exploratory study ever undertaken, this research seeks to determine the characteristics and assets of the physically recovered hemiplegics who cannot readily return to the work scene. Its intent is to increase the number of hemiplegia-disabled who can earn their own living through systematic exploration and training. A primary demand of industry is for the prognosis for work-life expectancy. It is perhaps the strongest barrier erected by industry. One standard manual on medical examinations for employment flatly dismisses applicants giving histories of cerebral hemorrhage, embolisms, thromboses, or strokes, as cases to be "routinely rejected."[4]

Other barriers, both deliberate and unwitting, are a part of the field conditions that this study must meet. Families, eager to help, build dependencies in the subjects—particularly seen in the aphasic patients whose grunts bring desired responses without the hard work of rebuilding more adequate communication. Employers cite the problems of insurance, safety hazards, and even the reactions of nonhandicapped coworkers to the entry of a hemiplegic into the plant. Incidental to this research, a little more than 40 hemiplegics have worked more than 32,000 man hours without a reportable or loss-of-time work accident in the Community Rehabilitation Industries' workshops.

The matter of prognosis of work life is difficult. For this research, it is a decision twice-reviewed prior to acceptance of a research subject candidate; a further determination is made at the termination of training. A medical examination is required of all applicants to the program, with additional referral to any indicated medical specialist. The information gained is reviewed by the medical division of the California Vocational Rehabilitation Service, a division of the State Department of Education. This agency first screens and processes all applicants. The final determination for acceptance is made by the Medical Advisory Committee of Community Rehabilitation Industries. This is a panel of five physicians, representing a wide spectrum of medical specialties, responsible for passing on all candidates for workshop entry irrespective of disability. A person is medically cleared, if in the best judgment of these physicians, he

can undergo training without jeopardy to life or health and if he will be able to offer a minimum of three years' work life to an employer on completion of training.

Prior to acceptance, additional interviewing and psychological testing is done. With clearances complete, the subject is accepted and entered into the workshop training. He is then systematically explored and assessed in terms of physical limits, learning capacity, judgment, adjustment to production demands and to work situation, and, especially, ability to meet changing conditions with minimum instruction. Dependent upon learning capacity, residual handedness, motivation, and other factors, the hemiplegic is trained in those specific job skills of electronics assembly, machine-shop work, inspection, or mechanical assembly that seem to fit his particular pattern. Adaptive methods and functional prosthetic appliances as prescribed by an orthopedic surgeon are used to enhance his output. In all cases, subjects are rated against the standards of private industry for the type of work done, both in quality of performance and quantity of output.[2]

Those succeeding in the training course are given terminal-phase training as line workers in Community Rehabilitation Industries' own production lines, then are aided to secure employment in private industry in work specialties in which they are able to compete with the nonhandicapped. A full file of information on these persons, for whom no rehabilitation efforts had previously been held feasible, is made available to the potential industrial employer and his medical department. This "placement package" points up as objectively as possible all areas of strength and weakness of the handicapped person as an industrial worker.[3]

Preliminary Findings

Perhaps the most unusual or unexpected of our preliminary findings is the relatively low age of onset for hemiplegic involvement. Of more than 160 applicants for this program, the mean age of onset for men is 36.5 years, for women 40.0 years. Involvement of cerebrovascular origin (all types) averaged 41.4 for male and 45.4 for female.

Etiology, while not a prime datum, is of interest on two counts. The reaction of employers, particularly their medical departments, is different in cases of stroke involvement than for those of a traumatic or disease etiology. Similarly, indications of a large and seemingly increasing number of hemiplegias due to traumatic insult to the brain should alert physicians as well as rehabilitation workers to the subtle differences in impairments from differing causes. A gross breakdown of etiology is given in the table.

Traumatic cases primarily result from automobile accidents, although war injuries and head blows contribute a fairly large share. Surgery was primarily for neoplastic growth. The organic diseases ranged from encephalitis to structural defects activated by hyperpyrexic transient diseases; cerebral palsy (4 cases) is included here.

Etiologic Classification of 160 Hemiplegics

No. and Sex	Cerebrovascular Accident	Trauma	Surgery	Disease	Unknown
Male 93	52%	33%	4%	6%	5%
Female 67	57%	21%	11%	11%	0

Socially, no significant differences are found within the applicant group as regards marital status, education, and dependents. Financially, there may be a difference, since it is less likely that hemiplegics from the higher income groups would apply for training to do industrial work. At entry, there is a preponderance of low-income persons, yet, at age of onset, income levels are up to the firm middle range and show much wider spread.

Of the 160 applicants described in the table, 40 have thus far been processed and entered into workshop training. Utilizing a practical age range of 16 to 55 years (which industry might accept), the gross number of potential candidates drops to approximately 140 in the population from which the sample is being drawn. All these persons were declared "nonserviceable" by the California State Vocational Rehabilitation Services and thus are qualified as belonging to the 70 percent that statistics indicate are not employable. The criterion of medical stability has been upheld in part. One fatal stroke has occurred in the total applicant group. This was an inpatient, male, age 48, who was scheduled for entry processing, but on whom medical data had not been received. On an actuarial basis, this incidence is lower than would be expected in any group of 160 persons aged 16 to 71 years over a 27-month period.

For the 40 entrants, a special status of "medical leave" is used to insure against temporary instability of medical condition affecting life, health, or training progress. A redetermination of prognosis is made prior to re-entry. Four persons have been given medical leave for these reasons: hypertension, 1; seizures, 2; intractable headache pain, 1. Brief leaves for other reasons (such as diabetes, because of virus infections, and dental work) have been granted to six other trainees. The cases of only two trainees have been closed while they were on medical leave status.

Several categories of employment and rehabilitation benefit may be utilized. Benefit 1, actual employment by an industrial firm, has been secured in four cases. Benefit 2 refers to nonproduction-line jobs accepted and held, a category accounting for four cases. In three cases, the

outcome has been benefit 3, paid work in a sheltered workshop other than Community Rehabilitation Industries. A return to school or the choice of another rehabilitation objective may be partly traced to this research program in five cases and is labeled benefit 4.

Currently, in addition to the 15 persons terminating with benefit, 11 are being trained, eight of whom appear capable of benefits 1 or 2. It would appear then that, even with this small group reported, the portion of cases in the 16 to 55-year age range held not "employable" can be materially reduced, with as many as one-third receiving direct benefit from an intensive program of vocational rehabilitation through industrial training. This would mean that some 10 to 15 percent more hemiplegics can return to work.

While it is early to recommend a course of action for physicians and rehabilitation workers on the basis of so few cases, it would seem that five selection factors can be used in determining which hemiplegia victims might well profit from intensive training. This research suggests selection on the basis of:

1. Medical stabilization with minimum four-year work-expectancy;
2. Strong motivation to gain work-life independence;
3. Evidence of work-learning capacity;
4. Psychiatric stability sufficient to adjust to industry;
5. Capability of handling self-care and transportation.

Summary

Under a federal grant from the Office of Vocational Rehabilitation and with local matching funds through the Heart Association of Long Beach and Community Rehabilitation Industries, the first research and demonstration project in the industrial rehabilitation of the hemiplegically disabled was begun in 1957. Of 160 applicants, 40 have thus far entered the program for intensive training, in which their skills, assets, and general work competency have been both developed and evaluated. Of this group, more than one-third have regained wage-earning capacity and partial benefits have accrued to an even larger proportion.

Implications

With a ratio for success approximating 10 to 14 percent for all applicants (accepted and rejected), and with the ratio for successes among entered subjects exceeding 30 percent, it would appear that an intensive program such as that conducted by Community Rehabilitation Industries might well change the statistics, 3 of 10 hemiplegics capable of return to employment, to 4 of 10. With more than 2 million stroke victims in the U.S., as estimated by the National Heart Institute, and with an equal potential number, due to trauma, surgery, and disease etiologies, it is reasonable to infer that nationally an intensive retraining program, if adopted in the rehabilitation centers of the United States, could benefit more than 400,000 persons.

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The Natural History of Cerebral Palsy

By Bronson Crothers, M.D.

and

Richmond S. Paine, M.D.

Published by Harvard University Press, Cambridge 38, Mass. 1959. 299 p. illus., figs., tabs. $6.50

Reviewed by Meyer A. Perlstein, M.D.

THE LITERATURE on the subject of cerebral palsy has been piling up voluminously in the past 10 years. Most of the worthwhile contributions have been limited to a single facet or phase of the subject or have been edited texts with a multitude of contributors and a diversity of viewpoints confusing to the uninitiated reader.

When all the literature is perused, one is impressed by the fact that not much has been added to the general clinical description of cerebral palsy over and above the excellent descriptions given by Little, by Osler, and by Freud. There has long been need for an authoritative volume written from a unified viewpoint, which might delineate a general approach to the problem of cerebral palsy. It is therefore most welcome to have a new book on cerebral palsy with the intriguing title, "The Natural History of Cerebral Palsy," emanating from the observations of excellent clinicians on a large group of patients over a period of 30 years.

Dr. Bronson Crothers, the senior author, was one of the first doctors to pay special attention to the field of cerebral palsy. His enthusiasm and interest in the subject, always tempered by cautious appraisal of his observations, was transmitted to the many doctors who came under his tutelage. Dr. Winthrop Phelps, often referred to as the "father of cerebral palsy" in this country, also came under the influence of Dr. Crothers, who might thus be called the "grandfather of cerebral palsy."

Some 10 years ago, the reviewer had the opportunity to meet with and then to become acquainted with Dr. Crothers. He was amazed and delighted to discover that the man was not an austere, opinionated dweller in an ivory tower, but rather was endowed with simplicity, modesty, warmth, and sense of humor. His wisdom, his understanding, and his basic approach to the problems were that of the practicing

About the Authors . . .

Dr. Crothers, a founding member and past president of the American Academy for Cerebral Palsy, was graduated from Harvard Medical School in 1910, where almost without interruption he was a faculty member since 1920. He interned at Children's Hospital, Boston, and served on its staff for many years; in 1952 he was made senior consultant in neurology at Children's Medical Center. He was a past president of the American Pediatric Society. Dr. Crothers died in his summer home in Sorrento, Maine, July 17, 1959, aged 75.

Dr. Paine is associate physician in neurology at Children's Medical Center, Boston, and associate in pediatrics at Harvard Medical School.

About the Reviewer . . .

Dr. Perlstein is chief of Children's Neurology Services, Cook County Hospital, and chief of the medical staff of the Illinois Children's Hospital-School, Chicago. He is professor of pediatrics at Cook County Postgraduate School of Medicine and associate professor of pediatrics at Northwestern University Medical School. A founding member of the American Academy for Cerebral Palsy, he has held the offices of secretary and president. Articles by Dr. Perlstein have appeared in numerous medical journals and monographic symposia. Dr. Perlstein was graduated from Rush Medical College, Chicago, in 1927 and was certified licentiate by the American Board of Pediatrics in 1936.

Drs. Crothers and Paine Comment on

Treatment of Motor Disabilities in Cerebral Palsy

"IF ANY CONCLUSIONS can be drawn from the material [cases of cerebral palsy] which we have studied, they must be accepted as general impressions:

1. The fundamental aim is to supervise the growth and development of the child, recognizing that achievement of maximal competence and independence in adult life is the criterion of success.

2. As far as actual therapy aimed at motor improvement is concerned, we have been impressed with the excellent results in cases where the physiological difficulty seems to be related to interference with 'pyramidal' control. In this group it is possible to prevent or control contractures by various means. If this allows the child to increase his independent activity, its value is evident. The disadvantages of indefinitely prolonged physical therapy seem to us to justify consideration of operation, as soon as progress becomes unsatisfactory.

3. Where the 'extrapyramidal' system, in its broadest sense, is involved, the value of persistent therapy and peripheral operation has not been evident. A very important fact is that some of these children adjust themselves to the disability and achieve considerable, even if limited, independence without intensive treatment. It has been possible to help some of these children by presenting an alternative method of achieving ends. Perhaps the most striking example is the well-known substitution of an electric typewriter for persistent efforts to improve handwriting.

4. We suggest that certain groups of able children do not need, or profit by, rigidly supervised training. Rough groupings of these patients are as follows:

a. Intelligent, freely mobile hemiplegics without contractures.

b. Children with mild cases of extrapyramidal palsy. These children, in our experience, are able to experiment profitably and to compete with some success and we believe that occasional adequate reappraisal is better for these children than insistent supervision.

c. Patients with severe cases that do not seem to respond to prolonged therapy of any sort. These include the worst of the extrapyramidal cases and particularly those in which primitive patterns of tonic neck reflexes persist into late childhood. The startling adjustments which some of these children make are the result of the fruitful ingenuity of the children and their parents rather than by attention received in clinics.

5. Other groups of children require special thought when training is considered:

a. Children with mental defect or irregularity. The enormous problem posed by the children had not been adequately considered in many of our cases until a late review was made.

b. Children who can be helped by braces. The resourceful use of carefully planned braces is indispensable. However, we question the desirability of so-called control bracing and have no evidence that it changes fundamental patterns, though it may occasionally lead to improvement.

c. Children with sensory defects, especially deafness, visual disturbances, and astereognosis. Such defects should be considered in planning.

"As we have pointed out, the presence of astereognosis and hemianopsia is relatively easy to establish in hemiplegic children. It is entirely likely that our failure to demonstrate them in children with bilateral difficulties is due to our failure to devise practicable tests.

"Before leaving this question of the management of motor difficulties, we would like to make certain generalizations. We do not believe that rigid, prolonged, and closely supervised physical therapy is always necessary, but we are not asserting that it does not have a place. Certainly we believe that the skillful physical therapist is indispensable.

"However, insistent control of all activities of the child may block experimentation and attempts at achievement of independence, and we look upon this possibility with distress.

"What is desperately needed is some method by which long-time progress may be reported so that there will be some ground for comparison of different methods."—*From* The Natural History of Cerebral Palsy, *by Bronson Crothers, M.D., and Richmond S. Paine, M.D., p. 207. 1959. Harvard University Press, Cambridge, Mass. $6.50.*

physician who understood children and their parents.

In the past five or six years, Dr. Crothers became interested in recording the natural history of cerebral palsied children in order better to understand how the course of the disease might be prognosticated from early observations and how it might be modified by treatment. The present volume has resulted from this study. From a group of 1,821 cerebral palsied patients who had been seen in the Children's Medical Center in Boston over a period of 30 years, Dr. Crothers and his group were able to bring back 655 for re-examination. An additional 746 were contacted by letters or by other means but were not examined. Each patient and the parents were seen during a full day or more and rechecked and re-evaluated completely. Moving pictures were taken where indicated and compared with those previously taken. Some of the observations that lent themselves to tabulation, *e.g.*, intelligence tests or developmental rates, are graphed or tabulated, while others dealing with social and emotional changes are described verbally. One can see Dr. Crothers —relaxed, smoking a pipe, and with the charm, astuteness, and power of observation of a medical Will Rogers "chewing the fat" with these patients and their parents.

Companion to The Natural History of Cerebral Palsy *is* Psychological Appraisal of Children with Cerebral Defects, *by Edith Meyer Taylor, Ph.D. The books were published simultaneously by Harvard University Press for The Commonwealth Fund. Dr. Taylor was long associated with Dr. Crothers and participated in the Crothers-Paine follow-up study. A review of her book by Ann E. Heilman, Ph.D., will appear in the April issue of Rehabilitation Literature.*

The clinical accuracy of the original diagnoses can be judged from the fact that, of the group of 655 re-examined patients, there were only 12 in whom the final diagnosis of cerebral palsy was not upheld. This is truly a remarkable record.

The authors approach the subject of cerebral palsy from the viewpoint of the pediatrician and the whole child. They point out that it is important to appreciate that brain injury affects not only the status quo of the patient but also his growth and development. One of the important concepts emphasized by the authors is that motor development may often depend more upon maturation than on training—unless one is aware of the natural history of the disease, one cannot be sure what portion of development was due to training and what was due to normal maturation. Emphasized also is the importance of ego development of the child from a state of complete dependency in infancy to one of complete independence at maturity, and it is pointed out that a physical disability might well upset the timing of such maturational progress.

Excellent descriptions are given of the clinical development of the various types of cerebral palsy. Special chapters are devoted to spastic hemiplegia, bilateral spastic cerebral palsies, "extrapyramidal" and mixed cerebral palsy, and kernicterus. The greatest uniformity in clinical syndromes was found to exist in the groups with spastic hemiplegia and with kernicterus. The section on spastic hemiplegia deals in great detail with a description of the sensory defect, a field in which Dr. Crothers and his group have made pioneer contributions. The portion that deals with motor and speech development in the spastic hemiplegic is not quite so informative. The authors point out that most patients with kernicterus will eventually walk with or without special treatment or bracing and that this group has better potential intelligence than other tetraplegic cerebral palsied.

There is an interesting chapter on life expectancy and employability, pointing out that the death rate is much higher in the cerebral palsied than in the normal population. The discussion of employability is a little more difficult to understand because of special terms and categories used by the authors, *e.g.*, "competitive," "competitive with or without concessions," and "non-competitive."

In the area of social and emotional problems, the material is presented primarily in the form of interesting and illustrative case histories. The importance of parental attitudes as modulators of social and emotional growth is pointed out. Resistance to parental authority is normal, and some children get along better without rigidly supervised training. The response of the frustrated cerebral palsied child to challenging situations may often be a withdrawal, resembling the "catastrophic reaction" of Kurt Goldstein.

Cerebral palsy is defined as a motor disability due to a nonprogressive abnormality of the brain that occurs early in life. The classification is a practical and simple one into a dichotomy consisting of: 1) spastics, comprising 65 percent of the cases; 2) the "extrapyramidal" and mixed types, who make up 35 percent. The most frequent diagnostic changes in cerebral palsy were from spastic paraplegia or hemiplegia to tetraplegia, and from spastic tetraplegia to mixed cases. The most common causes of cerebral palsy were found to be related to birth trauma, anoxia, and prematurity.

Many sage observations are made. The authors point out that the examination of a child with cerebral palsy is best done by observing his spontaneous activity rather than by manipulative examinations of a neurologic type. They question the value of psychogalvanic testing for hearing and of pneumoencephalography as a routine diagnostic procedure. The use of motion pictures to record the development of motor activity is extolled.

Surgery was found to be more useful in those with leg involvement than with arm, and of more value in the spastic than in the nonspastic groups. Emphasis is placed upon the value of the electric typewriter for patients with poor arm function. Extensive bracing of the athetoid was felt to be without value. Control of the psychological and emotional problem is more important in the athetoid than the correction of motor disabilities.

Some of the tabulated material is hard to understand, since the method of presentation is at times cumbersome. The material is not treated statistically, but this criticism is not serious, since the book is primarily a clinical one. The style is literary and the printing is of good quality. There is an adequately large bibliography, and the book has been well documented with 66 figures and illustrations and 37 tables.

This book, although falling short of being a complete textbook on cerebral palsy, is still the most authoritative to date on this subject. Its greatest contribution is in the description of the natural history of the disease and the recognition that the intrinsic physical, mental, and emotional developmental urges with which the child is endowed are more important than the extrinsic factors such as therapy, which may modulate but do not determine the end point of development.

This book is highly recommended to physicians, as well as to therapists, teachers, and other professional ancillary personnel interested in the field of cerebral palsy.

Other Books Reviewed

77

Education and Health of the Partially Seeing Child

By: **Winifred Hathaway**; revised by **Franklin M. Foote, M.D., Dorothy Bryan,** and **Helen Gibbons**

1959. 201 p. illus., tabs. (4th ed.) Published for the National Society for the Prevention of Blindness by Columbia University Press, 2960 Broadway, New York 27, N.Y. $5.00.

EACH EDITION of this work of Mrs. Hathaway, a staff member of the National Society for the Prevention of Blindness until her death in 1954, has been considered the basic textbook for those concerned with the welfare of partially sighted children. Several authorities in the field have cooperated in the present revision, retaining Mrs. Hathaway's viewpoint but incorporating new material on recent educational programs, on meeting needs of children in rural areas, on mechanical devices, and on long-term guidance. The book should prove valuable to school administrators, nurses, and teachers, since it covers diagnostic evaluation, teaching procedures, special education programs, and aids available for the partially sighted.

78

Guiding Today's Children; A Guidance Book for Teachers and Administrators of Elementary Schools

By: **Los Angeles County Superintendent of Schools Office**

1959. 295 p. illus., tabs. California Test Bureau, 5916 Hollywood Blvd., Los Angeles 28, Calif. $4.75.

PREPARED BY the Division of Research and Guidance of the Office of the Los Angeles County Superintendent of Schools, this textbook replaces the *Guidance Handbook for Elementary Schools,* published in 1948. Part II (p. 83-140) discusses planning to meet the needs of the mentally retarded, those with hearing, vision, or speech problems, emotionally disturbed children, and bright or gifted pupils. The five chapters in Part II discuss in a general way the aspects of the problems to be met, special education programing, community resources, and the role of parents.

79

It's Good to Be Alive

By: **Roy Campanella**

1959. 306 p. illus. Little, Brown and Company, 34 Beacon St., Boston 6, Mass. $4.50.

AS THE MOST highly paid catcher in professional baseball, Roy Campanella of the Brooklyn Dodgers won fame and recognition, but he has become even more famous and admired since the automobile accident in January, 1958, that left him a quadriplegic. With the aid of Joe Reichler of the Associated Press and Dave Camerer of the Columbia Broadcasting System, "Campy" tells the story of his baseball career from the days when he played with the Negro leagues at the age of 15. It is indicative of his magnificent spirit that he feels he is lucky to be alive. He tells of his experiences while hospitalized at the Institute of Physical Medicine and Rehabilitation in New York and of his long, slow fight back to an active life. Though still paralyzed, Campy is taking an active part in helping others who are physically handicapped. An inspiring story of a man who would not give up fighting even when the odds were against him.

80

Mental Deficiency; The Changing Outlook

Edited by: **Ann M. Clarke** and **A. D. B. Clarke**

1958. 513 p. figs., tabs. The Free Press, Glencoe, Ill. Order from Free Press, 119 W. Lake St., Chicago 1, Ill. $10.00.

A COMPREHENSIVE summary of the literature dealing with the psychological and social aspects of mental deficiency has been presented by a group of clinical and research psychologists and a speech therapist, all of whom are well known in England for their work in this field. The relationship between theory and practice and the use of experimental methods in both areas, as well as the means for dealing with learning difficulties and the social problems posed by mental deficiency, are discussed. Includes a chapter on cerebral palsy and mental defect by Elspeth Stephen, a clinical psychologist. Contains 30 pages of bibliography.

81

My Eyes Are in My Heart

By: **Ted Husing** (written with **Cy Rice**; introduction by Ralph Edwards)

1959. 287 p. illus. Published by Bernard Geis Associates and distributed by Random House, 457 Madison Ave., New York 22, N.Y. $3.95.

A PIONEER among radio broadcasters, Ted Husing raced through life, as he expresses it, "with my foot pressed firmly against an imaginary accelerator." In this work he covered many events of national importance—political conventions, sports ranging from the World Series to the Kentucky Derby, on-the-spot broadcasting of headline events—and, finally, became the announcer and impressario for "Ted Husing's Bandstand," a program that helped to launch promising young talent on the way to success. Until an operation for brain tumor cost him his sight, he had never taken stock of his life; many months and the kindness of a multitude of friends finally convinced him that life, even on these terms, could have meaning. Now living in California, Husing has returned to radio work, though he still cannot walk without assistance or see clearly.

82

Second Sight

By: **Sidney Bigman**

1959. 219 p. David McKay Company, 119 W. 40th St., New York 18, N.Y. $3.50.

A CAREFREE young American, happily married and with no financial worries, is left totally blind following an illness. When a year's treatment in a Swiss hospital failed to restore his sight, he gradually realizes that he must rebuild his life, free of his wife's solicitude and the negative attitudes of his fellow patients. Choosing to live in Paris, where he is unknown and where he hopes to be accepted as the blind man he now is, David Blondeau meets a French girl whose devotion and respect help him to regain self-respect. The psychological effects of sudden blindness, the reshaping of personal values, the struggle for acceptance as a human being are woven through the story to bring new understanding of the problems of the blind. The author himself lost his sight in 1948; this autobiographical novel was written to answer questions he has been asked in regard to blindness.

83

The Taste of Ashes; An Autobiography

By: **Bill Stern** (with **Oscar Fraley**)

1959. 218 p. illus. Henry Holt and Co., 383 Madison Ave., New York 17, N.Y. $3.95.

IN THIS PERSONAL account of a nationally known sports announcer's fight to overcome drug addiction, Bill Stern tells briefly of his youth, the events leading up to the accident that necessitated amputation of his left leg, and the growing problem of addiction throughout 20 years of his career. His collapse at the Sugar Bowl Game on New Year's Day in 1956 caused him to again seek hospitalization; after an unsuccessful attempt to throw off the drug habit, he was again hospitalized in June at the Institute of Living in Hartford. After six months of treatment he emerged a different man, able to face the reality of pain and confident in the knowledge that he had overcome his worst problems. By September, 1957, he was again back on the air as a sports announcer but the going was not completely smooth. Public approval of his comeback and his ability was evident in his being named the favorite radio sports announcer for 1958.

84

Where Somebody Cares: The Mary Manning Walsh Home and Its Program for Complete Care of the Aging . . .

By: **Mother M. Bernadette de Lourdes** and the Staff of the Mary Manning Walsh Home

1959. 252 p. illus. G. P. Putnam's Sons, 210 Madison Ave., New York, N.Y. $5.00.

MANUALS OR GUIDES to desirable practices in the administration of homes for the aged are few and often presented in general terms. For that reason, the practices suggested here should be of great value since they have evolved from over seven years' experience with residents of the Mary Manning Walsh Home, New York City. The book is divided into two sections, dealing with specialized services offered by the Home and its administration and business management procedures (including plant maintenance). Services of the Home include social casework, physical medicine and restoration, psychological and geriatric health services, speech and hearing therapy,

occupational therapy, group work, recreation, and education, nursing, nutrition, personalized household and general resident services, and spiritual services. Additional aids are listed in appendixes and include certificate of incorporation, by-laws, resident council by-laws, case histories, and forms used in the administration of the Home.

85

With Heart and Hand; Ten Years of the Cooperative Movement of Invalids in Poland

By: **Union of Cooperatives of Invalids, Warsaw, Poland**

1959. 119 p. illus. Written by Boleslaw Mrowczynski, translated into English by Maxim Lieber, and illustrated by Henryk Rosiak. Published by the Union and distributed in the U.S. by the Polish Embassy, Washington 9, D.C.

THE COOPERATIVE workshops for the disabled in Poland began after World War I but received their real impetus after the second war under the most trying of postwar conditions. By text and numerous photographic illustrations the history of the movement has been documented. As of December 31, 1958, there were 369 workshops for the handicapped, employing 62,724 workers of which 49,265 were disabled. Described are the various types of workshops, their industrial products, and the kinds of workers employed. The appalling working conditions and makeshift factories that existed first are being improved by new machinery and by new well-designed buildings.

86

Workshop Conference: Recent Advances in Teaching and Research in Cerebral Palsy, San Francisco State College, San Francisco, July 16, 17, 1959

Edited by: **William M. Usdane,** Coordinator of Special Education and Rehabilitation Counseling, San Francisco State College.

1959. 78 p. Mimeo. Available from Dr. William M. Usdane, San Francisco State College, 1600 Holloway, San Francisco 27, Calif.

THE TWO-DAY summer session teacher training program for the cerebral palsied, conducted by Dr. Mabel Whitehead, was sponsored and supported by the College, San Francisco Cerebral Palsy Association, and The United Cerebral Palsy Association's Research and Education Foundation. Dr. Meyer A. Perlstein offered clinical material through case presentations; his answers to questions from the audience of 500 were recorded. Three special teachers participated in a panel on teacher training and teacher technics in cerebral palsy. The proceedings include a paper by E. Walton Kirk on psychological tests to determine educability.

This abstracting section, together with other numbered references indexed in this issue, serves as a supplement to the reference book Rehabilitation Literature 1950-1955, *compiled by Graham and Mullen and published in 1956 by the Blakiston Division of McGraw-Hill Book Company, New York. An author index will be found on the last page of the issue.*

AMPUTATION—BIOGRAPHY

See 83.

AMPUTATION—PROGRAMS

87. Lambert, Claude N. *(104 S. Michigan Ave., Chicago 3, Ill.)*

A questionnaire survey of juvenile to young-adult amputees who have had prostheses supplied them through the University of Illinois Division of Services for Crippled Children, by Claude N. Lambert and Jean Sciora. *J. Bone and Joint Surg.* Dec., 1959. 41-A:8:1437-1454.

An analysis and evaluation of data received on 182 amputees with 198 amputations. Incidence of amputations by cause, age distribution of patients, surgical procedures used, and parent attitudes were studied, as well as prosthetic fitting and training and the factors influencing social acceptance of the amputee. The questionnaire form used in the survey is included.

ART

88. St. Colletta Schools

Art education curriculum for the mentally handicapped, developed by the Sisters of St. Francis of Assisi. . . . Milwaukee, Cardinal Stritch College, c1959. 49 p. illus. Spiral binding.

Based upon experience in teaching mentally retarded children, this outline of a sequential program for the development of creative ability in the retarded suggests suitable materials, methods to employ, means of motivating children, and guides to the development of the appreciation of beauty. Includes a short bibliography and the addresses of sources for art supplies.

Available from the Special Education Dept., Cardinal Stritch College, 3195 S. Superior St., Milwaukee 7, Wis., at $3.00 a copy.

AUDIOMETRIC TESTS

89. Siegenthaler, Bruce M. *(Speech and Hearing Clinic, Pennsylvania State Univ., University Park, Pa.)*

Incidence and patterns of hearing loss among an adult mentally retarded population, by Bruce M. Siegenthaler and Doris F. Krzywicki. *Am. J. Mental Deficiency.* Nov., 1959. 64:3:444-449.

This article reports results of a hearing testing program conducted at Laurelton State Village, Pennsylvania, an institution for females of child-bearing age. Findings revealed an incidence of hearing loss considerably above the 5 percent incidence usually reported among school children and above the 3 to 9 percent loss reported for females in the 15 to 44 age group in the general population. The findings have implications for educational, vocational, and social habilitation.

BACKACHE

90. Moe, John H. *(Div. of Orthopedic Surgery, Univ. of Minnesota, Minneapolis 14, Minn.)*

Low back pain and sciatica. *Phys. Therapy Rev.* Dec., 1959. 39:12:800-808.

Presents a classification of the causes of low-back sciatic pain, the most common of which are degeneration and migration of the intervertebral disks of the low lumbar spine and postural strain due to lumbar lordosis and faulty posture. Includes three case histories: 1) Low back pain, by Elizabeth Fowler.—2) Postoperative herniated nucleus pulposus, by Mike Kumpuris.—3) Recurrent back pain; emotional and physical aspects, by Margaret L. Sexton, Roland Leonard, and Josephine Buchanan. All three discuss the use of physical therapy in the treatment programs.

BLIND

91. Bergman, Moe *(Speech and Hearing Center, Hunter College, New York 21, N.Y.)*

Rehabilitating blind persons with impaired hearing. *New Outlook for the Blind.* Dec., 1959. 53:10:351-356.

In same issue: Training normal hearing to greater usefulness, by Fay-Tyler M. Norton, p. 357-360.

In June, 1958, the Industrial Home for the Blind, Brooklyn, supported by a grant from the U.S. Office of Vocational Rehabilitation, activated a research program to evaluate and rehabilitate blind persons who are hard of hearing. Progress in the first year of operation is summarized and plans for the future outlined briefly.

The second article, by Dr. Norton *(Cleveland Society for the Blind, 1958 E. 93rd St., Cleveland 6, Ohio)* reports on a special hearing research project, also under a grant of the Office of Vocational Rehabilitation, the purpose of which is to develop training methods for accelerating the learning process of the newly blinded. Now in its third year, the project has concentrated on testing the effectiveness of the use of binaural tape recordings to locate and identify things by sound.

See also 81; 82.

BLIND—SPECIAL EDUCATION—EUROPE

92. Taylor, Wallace W. *(N.Y. Univ. College for Teachers, Albany, N.Y.)*

The education of the blind in Western Europe, by Wallace W. Taylor and Isabelle Wagner Taylor. *Internatl. J. Educ. of the Blind.* Dec., 1959. 9:2:25-31.

Another in the series of articles by the authors on their European survey (see *Rehab. Lit.*, Jan., 1960, #66; Sept., 1959, *p. 259*). See news item, this issue of *Rehab. Lit.*, p. 76.

BRAIN

93. **Courville, Cyril B.** *(Los Angeles Co. Gen. Hosp., 1200 N. State St., Box 76, Los Angeles 33, Calif.)*

Venous channel thrombosis as a possible cause of cerebral paralysis of early life. *Arch. Pediatrics.* Apr., 1959. 76:4:129-153.

Literature dealing with the pathology of intracranial venous thrombosis, especially that occurring in early life, was reviewed, as well as 53 cases verified at autopsy by the author. The concept of venous thrombosis as a cause of certain groups of lesions of early life is believed to contain serious flaws. Dr. Courville's investigations lead him to conclude that thrombosis of the intracranial venous channel is a rare occurrence in the newborn; when it does occur, it is usually found in a premature infant afflicted with debility rather than a result of cranial distortion incident to dystocia. Other findings that appear to contradict the original concept are discussed. It appears reasonably certain that, although a paralytic state (progressive decerebration with spasticity) may follow thrombosis of the superior longitudinal sinus in early life, the clinical course is progressively downward, with a fatal issue usually within a year. Progressive failure of mentation is also observed. The lesions found at autopsy do not correspond, in nature or distribution, with those of nodular cortical atrophy or other lesion-complexes found in cases of cerebral palsy.

BRAIN INJURIES

94. **Denhoff, Eric** *(Meeting Street School Children's Rehab. Center, Providence, R.I.)*

The syndromes of cerebral dysfunction, by Eric Denhoff, Maurice W. Laufer, and Raymond H. Holden. *J. Okla. State Med. Assn.* June, 1959. 52:6:360-366.

The phrase "syndromes of cerebral dysfunction" is suggested to replace such terms as "brain-damaged" or "brain-injured child." New methods of diagnosis in cerebral dysfunction are discussed. Sensory and emotional problems must be treated in conjunction with physical rehabilitation.

BRAIN INJURIES—PSYCHOLOGICAL TESTS

95. **Schachter, Frances F.** *(Psychiatry Div., St. Luke's Hosp., New York 25, N.Y.)*

Perinatal asphyxia and psychologic signs of brain damage in childhood, by Frances F. Schachter and Virginia Apgar. *Pediatrics.* Dec., 1959. 24:6:1016-1025.

The second report of follow-up studies on an unselected sample of newborn infants (see *Bul. Current Lit.*, Aug., 1955, #785). The sample for the present study consisted of 156 children. Positive findings from psychological testing appear to support results of previous studies showing a significant effect of early asphyxia. However, the clinical significance of the findings must be viewed with caution, in view of the relatively small mean decrement of 4.87 points in IQ and the negative findings on the remaining special tests of brain damage. Suggested refinements in future studies resulted from past and present research. The limitations of measurement of oxygen content are discussed, with suggestions for further research.

See also 115; 116; 129.

CEREBRAL PALSY

96. **Spastics' Quart.** Dec., 1959. 8:4.

Partial contents: Intellectual and emotional difficulties in education, A. A. Hill, p. 4-12.—Problems of physiotherapy in a cerebral palsy school, Patricia Beaman, p. 13-22.—Speech problems of the 7-12 age group in a school for cerebral palsy, Marjorie Willacy, p. 23-31.—A new cerebral palsy day unit for mothers and children, p. 31.

Articles on cerebral palsy in this issue deal with problems of the 7 to 12 age group; the three contributors are, respectively, headmistress, physiotherapist-in-charge, and speech therapist at the Dame Hannah Rogers School, Ivybridge, Devon, England, a residential school.

Spastics' Quarterly is published by the British Council for the Welfare of Spastics, 13 Suffolk St., Haymarket, London, S.W. 1, England.

See also 86; 124; p. 58; and correction notice, p. 74.

CEREBRAL PALSY—ETIOLOGY

97. **Crome, L.** *(Fountain Hosp., Tooting, London, England)*

Sclerosis of the centrum semiovale in a case of infantile cerebral palsy, by L. Crome and J. Foley. *J. Mental Deficiency Research.* June, 1959. 3:1:63-74.

Although scarring of the white matter is common in cases of infantile cerebral palsy and low-grade mental deficiency, it usually involves also the adjoining cortex, as in ulegyria and lobar sclerosis. Sclerosis of the centrum semiovale resembles Schilder's disease but is nonprogressive. A case history, with pathological findings, of a male infant who died at 17 months is reported.

See also 93.

CEREBRAL PALSY—MEDICAL TREATMENT

98. **Morello, A.** *(Central Islip State Hosp., Central Islip, N.Y.)*

Treatment by hemispherectomy of nine cases of spastic hemiplegia, severe mental retardation and intractable epilepsy, by A. Morello, F. J. O'Neill, and T. I. Hoen. *Psychiatric Quart.* Jan., 1959. 33:1:44-54.

The authors review the clinical indications, the neurosurgical technic, and the results of hemispherectomy for treating spastic hemiplegia, epilepsy, and behavioral anomaly. Their experience with nine cases is illustrated by the reporting of one case history having favorable results.

CEREBRAL PALSY—OCCUPATIONAL THERAPY

99. **Mary Lauretana, Mother** *(Joseph P. Kennedy Jr. Mem. Hosp., Warren St., Brighton, Mass.)*

Rehabilitation of the upper extremity in infantile spastic hemiparesis, by Mother Mary Lauretana, Doris L. Partan, and Thomas E. Twitchell. *Am. J. Occupational Ther.* Nov.-Dec., 1959. 13:6:264-267.

Dexterous use of the hand can be obtained within a period of two or three months, utilizing technics discussed by the authors. The technics, based upon Dr. Twitchell's physiologic studies of hemiplegia, have been

devised to substitute extension of the wrist for the usual synergistic flexion, and to obtain more dexterous use of the fingers through proprioceptive facilitation.

CHRONIC DISEASE—PERSONNEL

100. Hackley, John A. *(802 Lehman Bldg., Peoria, Ill.)*

Instructing nursing home personnel in rehabilitation techniques. *Public Health Rep.* Nov., 1959. 74:11:989-994.

In same issue: Filling training needs, Bruce Underwood, p. 986-988.—Training nursing home administrators, Herbert R. Domke and John C. Murphy, p. 995-1000.

Because state and local health departments have assumed responsibility for helping to relieve shortages of trained personnel in nursing homes and homes for the aged, *Public Health Reports* contributes to their efforts by including three articles on nursing home courses. The technics described are based on actual experience and suggest different approaches to training personnel. (A previous article by Mr. Hackley is listed in *Rehab. Lit.*, May, 1959, #381.)

CLEFT PALATE—SPEECH CORRECTION

101. Spriestersbach, Duane C. *(Univ. of Iowa, Iowa City, Iowa)*

Articulation skills, velopharyngeal closure, and oral breath pressure of children with cleft palates, by Duane C. Spriestersbach and Gene R. Powers. *J. Speech and Hear. Research.* Dec., 1959. 2:4:318-325.

In same issue: Intelligibility and associated physiological factors of cleft palate speakers, Joanne D. Subtelny and J. Daniel Subtelny. p. 353-360.

Lateral head x-rays, intraoral breath pressure measurements, and Templin articulation scores were taken for a series of 103 children with cleft lips and palates. Findings of previous studies suggest that cleft palate speakers typically have difficulty in building up enough air pressure in the oral cavity for the production of speech. This study found that measures of intraoral breath pressure were related to velopharyngeal competency and articulation scores. Children with cleft lip only had, in general, normal oral pressure and articulation scores. The measurement of oral breath pressure of speakers with cleft lips and palates can be of major diagnostic value in establishing the basis for articulation problems.

The authors of the article on p. 353 *(Eastman Dental Dispensary, Rochester, N.Y.)* studied specific articulatory errors in cleft palate speech in relation to the velopharyngeal opening and dental problems. Findings of the study suggest that the types of phonetic characteristics of articulatory errors in cleft palate speech are influenced by the degree of velopharyngeal opening. The results failed, however, to reveal a direct relationship between velopharyngeal opening and total speech intelligibility.

CONGENITAL DEFECT—ETIOLOGY

102. Coffey, Victoria P. *(Moyne Inst. of Preventive Med., Trinity Coll., Dublin, Ireland)*

Maternal influenza and congenital deformities; a prospective study, by Victoria P. Coffey and W. J. E. Jessop. *Lancet.* Nov. 28, 1959. 7109:935-939.

The incidence of congenital deformities of children born to 663 women who reported having influenza during pregnancy was 2.4 times that in the children of the control group. The women studied were those attending antenatal clinics in Dublin during the 1957-58 epidemic of Asian influenza. The abnormalities were almost entirely of the central nervous system, the commonest being anencephaly. The greatest risk of malformation took place in the first three months.

See also 135.

CONVALESCENCE—RECREATION

103. National Recreation Association *(8 W. Eighth St., New York 11, N.Y.)*

Recreation for patients in general hospitals, by Beatrice H. Hill and Elliott M. Cohen. New York, The Association, 1959. 14 p. Mimeo. 35¢.

A pamphlet for hospital administrators and others seeking answers to questions as to what recreation is, how it can be used in the general hospital setting, and what it can and cannot be expected to achieve for patients. Mrs. Hill is Director of NRA's Consulting Service on Recreation for the Ill and Handicapped and Mr. Cohen is Assistant to the Director of the Consulting Service.

COOPERATIVE ASSOCIATIONS—POLAND

See 85.

DEAF

104. U. S. Public Health Service

Health aspects of hearing conservation; proceedings of the Working Conference . . . Washington, D.C., May, 18-19, 1959. n.p., Am. Acad. of Ophthalmology and Otolaryngology, 1959. 55 p. fig., tab. (*Trans.*, Am. Acad. Ophthalmology and Otolaryngology. Suppl. Nov.-Dec., 1959)

A report of a conference, sponsored jointly by the U.S. Public Health Service and the Office of Vocational Rehabilitation, to explore the public health aspects of hearing impairment.

Contents: Deafness in the 20th century, Powrie V. Doctor.—Hearing conservation over the years, Edmund Prince Fowler, Sr.—Hearing thresholds in the National Health Examination survey, Alice M. Waterhouse.—The relation of research to health aspects of hearing conservation, Hallowell Davis.—Hearing conservation past and future, Aram Glorig.—(Reports and recommendations on:) Early case finding.—Care of persons with impaired hearing.—Habilitation and rehabilitation.—Training and research.—Chairman's summary of the Conference.

DEAF—EMPLOYMENT

105. Gallaudet College *(Kendall Green, Washington 2, D.C.)*

Occupational conditions among the deaf; a report on a national survey conducted by . . . and the National Association of the Deaf, by Anders S. Lunde and Stanley

K. Bigman. Washington, D.C. The College, 1959. 66 p. tabs. $2.00.

The last large-scale study of the vocational experiences of the deaf was conducted in 1934-35 by the Office of Education with CWA funds. The current survey, reported here, began in 1955 under a grant from the Office of Vocational Rehabilitation. A special survey committee of the National Association of the Deaf conducted the field work throughout the U.S., obtaining data from over 10,000 deaf respondents. Analyses of the questionnaires and tabulations and drafting of the report were performed first by Dr. Lunde and completed by Dr. Bigman, both of the Department of Sociology of Gallaudet College.

Contents: Introduction.—Summary and concluding comments.—Ch. 1, The survey respondents: personal characteristics, education, hearing loss and means of communication.—Ch. 2, The economic position of the deaf.—Ch. 3, Hearing loss, communication skills and the occupational position of the deaf.—Ch. 4, Effects of extent of education and of vocational training on occupational position.—Ch. 5, The world of work as seen by the deaf.—Appendixes.

DEAF—SPECIAL EDUCATION

106. Mary Walter, Sister *(St. John's School for the Deaf, 3680 S. Kinnickinnic Ave., Milwaukee 7, Wis.)*

The Fitzgerald Key on wheels. *Am. Annals of the Deaf.* Nov., 1959. 104:5:366-371.

Describes a device and how it is used in drill work in speech and language training. If desired the educational wheels may be purchased from St. John's School at $2.85 plus postage (about 40¢), teaching materials (32 sheets) at $1.10.

107. Thompson, Thelma G. *(Div. of School Health, Georgia Dept. of Public Health, Atlanta, Ga.)*

A public health nurse teaches Mother and Baby Care to deaf girls. *J. School Health.* Dec., 1959. 29:10:365-371.

A description of a pilot project conducted by the author, a public health nurse, at the Georgia School for the Deaf. Results of teaching two classes of deaf girls through the use of an interpreter were highly satisfactory. Methods of instruction and adaptations necessary because of the hearing impairment of participating students are discussed. The values of realistic educational programs such as this in the ultimate social and vocational adjustment of deaf pupils are stressed.

See also 131.

DIABETES—EMPLOYMENT

See 112.

EPILEPSY—MEDICAL TREATMENT

See 128.

FRACTURES

108. Nichols, P. J. R. *(R.A.F. Med. Rehabilitation Unit, Chessington, England)*

Rehabilitation of malleolar fractures of the tibia and fibula, by P. J. R. Nichols and J. G. Parrish. *Annals Phys. Med.* Nov., 1959. 5:4:128-140.

Early transfer to rehabilitation centers of patients with malleolar fractures of the tibia and fibula is recommended; those arriving later than the second post-plaster week require longer periods of treatment than those who are available for treatment in the immediate post-plaster phase. A classification of ankle fractures and the method of their treatment at R. A. F. Rehabilitation Centres are presented. Data from the medical records of 191 patients treated since 1946 are used as the basis of conclusions.

GUIDANCE

See 78.

HARD OF HEARING

See 91; 104.

HARD OF HEARING—EQUIPMENT

109. Kodman, Frank, Jr. *(Audiology Clinic, Univ. of Kentucky, Lexington, Ky.)*

Some attitudes of successful hearing aid users, by Frank Kodman, Jr., and Arthur Fein. *Eye, Ear, Nose and Throat Month.* Dec., 1959. 38:12:1027-1030.

Replies received from a questionnaire survey of 121 adults (57 females and 64 males) as to factors contributing to hearing aid success or failure were analyzed. Opinions expressed indicated that vanity, pride, and sensitivity are the major deterrents to wearing a hearing aid and that the major benefits are that hearing aids facilitate socialization, improve hearing, and help vocationally and psychologically. Research to consider personality variables underlying successful and nonsuccessful hearing aid acceptance is suggested.

HARD OF HEARING—PARENT EDUCATION

110. Taylor, Ian G. *(Univ. of Manchester, Manchester, England)*

Children handicapped by deafness: Helping the parents. *Med. World.* Nov., 1959. 91:5:453-458.

Dr. Taylor reviews for the general practitioner the special problems of the hard of hearing child and his parents, discussing the significance of hearing, diagnosis, auditory training, and parent attitudes.

HEART DISEASE

111. Gasul, Benjamin M. *(25 E. Washington St., Chicago 2, Ill.)*

Angiocardiograms of normal and abnormal hearts, by Benjamin M. Gasul (and others). *Med. Radiography and Photography.* Vol. 35, Suppl., 1959. p. 1-44.

Entire issue devoted to the article.

This article by Dr. Gasul and his associates at Cook County Children's Hospital consists of a brief explanatory text and many angiocardiograms of the normal heart and of various congenital cardiac abnormalities. Each is also illustrated, except for the group of vascular anomalies, by a colored diagram of circulatory dynamics involved.

HEART DISEASE—EMPLOYMENT

112. Wyshak, Grace *(Dept. of Public Health Practice, Harvard Univ. School of Public Health, Boston 15, Mass.)*

Work experience of persons with cardiovascular disease or diabetes, by Grace Wyshak (and others). *J. Chronic Diseases.* Dec., 1959. 10:6:525-537.

A study was made of absenteeism and clinic visits of 691 persons with cardiovascular disease or diabetes and 691 matched controls from 17 different firms and institutions. Comparable attendance rates when grouped by diabetes and types of heart disease, as well as by age groupings, are analyzed. It was found that employees with heart disease and diabetes can and do work. Medical care given by company medical departments in the form of preventive services was associated with lower disability rates.

HEART DISEASE—SPECIAL EDUCATION

113. Cantoni, Louis J., ed. *(Dept. of Special Education and Vocational Rehabilitation, Wayne State Univ., Detroit 2, Mich.)*

Guidance for the cardiac child. *Mich. Educ. J.* Dec. 1, 1959. 37:8:296, 320.

At the conference of the Michigan Heart Association, October, 1958, some 50 teachers, doctors, and nurses discussed ways to help cardiac children. Dr. Cantoni chaired the discussion and summarizes it here in question and answer form.

HEMIPLEGIA—EMPLOYMENT

See p. 58.

MENTAL DEFECTIVES

See 80; 89.

MENTAL DEFECTIVES—NEW JERSEY

114. The Welfare Reporter, N.J. Institutions and Agencies. Oct., 1959. 10:4:150-180.

Title of issue: Mental deficiency, New Jersey, 1959; a mid-century review.

This issue is devoted entirely to the program of the joint meeting of the State Board of Control and the Boards of Managers of the State Training Schools for the Mentally Deficient held at the State Colony, New Lisbon, on June 10, 1959.

Contents: Institutions: A brief summary through the mid-twentieth century, Harry VonBulow.—Relationship of mental retardation to mental health, V. Terrell Davis.—Current institutional programs, Maurice G. Kott.—Community programs: Educational, Boyd Nelson.—Community programs: General, Grace G. Ober.—Research: Medical, Miles E. Drake.—Research: Psychological and social, Leonard Blackman.—Unresolved issues, John W. Tramburg.

MENTAL DEFECTIVES—PSYCHOLOGICAL TESTS

115. Delp, Harold A. *("Little City," Palatine, Ill.)*

Psychological evaluation; some problems and suggestions. *Training School Bul.* Nov., 1959. 56:3:79-84.

Conflicting attitudes regarding the usefulness of psychological tests, especially in the evaluation of mental retardation, influence psychologists' reports and interpretations. Dr. Delp comments on some of the common problems associated with establishing the validity, reliability, objectivity, and standardization of tests. He emphasizes that tests must be used for the purposes for which they were intended; special evaluation devices may be used, in addition, to obtain an adequate and complete evaluation of the person being tested.

116. Luria, A. R. *(Inst. of Defectology, Moscow Univ., Moscow, U.S.S.R.)*

Experimental study of the higher nervous activity of the abnormal child. *J. Mental Deficiency Research.* June, 1959. 3:1:1-22.

Prof. Luria is well known as a psychologist and neurologist, enjoying a notable reputation in the field of dysphasia. (His book *Speech and the Development of Mental Processes in the Child,* written in collaboration with Dr. F. Ia. Udovich, was published in 1959 by Staples Press, London.) A previous paper (see *Rehab. Lit.,* May, 1959, #402) discussed the theory that mental maldevelopment of the child may be caused by relatively limited particular defects. The present paper reports experiments in the study of the higher nervous processes of normal children, children with the cerebroasthenic syndrome, and oligophrenic children, by recording motor reactions to verbal instruction. Methods and responses noted are reported and discussed.

MENTAL DEFECTIVES—RECREATION

117. Sember, Andrew T. *(The Training School, Vineland, N.J.)*

Summer recreation for retardates. *Training School Bul.* Nov., 1959. 56:3:85-100.

Three years' experience with a summer camping program instituted in 1957 as part of the professional program of the Vineland Training School offers an opportunity to evaluate the success or failure of various projects and activities included in the program. A supplement gives data on various areas of recreation, the characteristics of children participating, and their response to the activities and projects. (For an earlier article on this program, see *Rehab. Lit.,* Jan., 1958, #70.)

MENTAL DEFECTIVES—SPECIAL EDUCATION

See 88; 123; 124.

MENTAL DISEASE

118. Leveen, Louis *(Jewish Committee for Personal Service, Los Angeles, Calif.)*

A rehabilitation center for the discharged mental-hospital patient, by Louis Leveen and David Priver. *Soc. Casework.* Dec., 1959. 40:10:558-562.

The Jewish Committee, a casework agency, established in 1954 the Gateways Mental Health Center, a psychiatric and rehabilitation facility that operates as a halfway house offering psychosocial services. This paper describes the program provided 149 expatients received from the state hospital on a trial basis. Two case histories illustrate the rehabilitation program.

119. Simon, Benjamin *(163 Hillside Ave., Arlington Heights 74, Mass.)*

Psychiatric rehabilitation. *J. Am. Med. Assn.* Dec. 12, 1959. 171:15:2098-2101.

Four trends of the past decade indicate how far beyond

the dictionary definition we have come: 1) The "open hospital" and the "therapeutic community," and their effect on increased services and improved hospital-community relationships; 2) the psychodynamics involved in the "therapeutic use of self;" 3) the development, and need for integration, of the variety of transitional agencies between hospital and community; and 4) the establishment of the mental hospital as a true "community hospital."

MENTAL DISEASE—OCCUPATIONAL THERAPY

120. Elson, Jean *(V.A., New York Regional Office, 252 7th Ave., New York, N.Y.)*

Role of the curative workshop in trial-visit programs. *Am. J. Occupational Ther.* Nov.-Dec., 1959. 13:6:272-275.

In same issue: A program for geriatric patients from hospital to community, by Frances B. Moss and Genevieve Stewart, p. 268-271.

The New York regional office of the V.A. maintains a curative workshop in its day care program. Various aspects of the workshop's program are discussed to demonstrate the value to the patient of this bridge from the hospital to life in the community.

In the second article the authors (V.A. Hosp., Sepulveda, Calif.) describe goals and patient activities in occupational therapy in a 956-bed hospital, in which 750 beds are assigned to neuropsychiatric patients.

MENTAL DISEASE—SURVEYS

121. Bahn, Anita K. *(Biometrics Branch, Natl. Institute of Mental Health, Bethesda, Md.)*

First national report on patients of mental health clinics, by Anita K. Bahn and Vivian B. Norman. *Public Health Rep.* Nov., 1959. 74:11:943-956.

Statistical reporting for outpatient psychiatric clinics on a nationwide basis was established in 1954 by the National Institute of Mental Health. This article presents for the first time a summarization of national data on the characteristics of clinic patients and the services they received as reported for 1955-56. A nationwide report on community service activities of such clinics will be published at a later date. Implications of the findings for further studies are discussed.

122. U.S. Public Health Service

Patterns of retention, release, and death of first admissions to state mental hospitals; the experience during the first 12 months of hospitalization of patients admitted to 11 state hospital systems in 1954, by Earl S. Pollack (and others). Washington, D.C., Govt. Print. Off., 1959. 53 p. figs., tabs. *(Public Health monograph no. 58; Public Health Serv. publ. no. 672)*

Major objective of the study was to illustrate appropriate statistical methods and the problems of conducting such a study; emphasis is on the limitations of the data for purposes of interstate comparisons. The study has shown that many factors account for the level of the release and death rates in different hospital systems; such factors assume varying degrees of importance among the specific categories of patients admitted to the hospital in the various state systems. A major portion of the report is given over to a discussion of the complex nature of mental hospitals and the variables that influence release and death rates. Also discussed is the basic clinical, epidemiological, and social science research needed.

Available from U.S. Superintendent of Documents, Government Printing Office, Washington 25, D.C., at 40¢ a copy.

NEUROLOGY

See 98; 99; 116.

NURSERY SCHOOLS

123. Bindman, Arthur J. *(9 Bradford Rd., Belmont 78, Mass.)*

A nursery center program for preschool mentally retarded children, by Arthur J. Bindman and Lewis B. Klebanoff. *Am. J. Mental Deficiency.* Nov., 1959. 64:3: 561-573.

A report on the state-supported program in Massachusetts. Between October, 1957, and May, 1958, 17 nursery classes were established in 14 centers with the help of local parents groups.

124. Weiss, Ray C. *(Creative Workshop for the Retarded Child and the Emotionally Disturbed, Wantagh, L.I., N.Y.)*

A creative workshop for retarded and emotionally disturbed children. *Nursing Outlook.* Dec., 1959. 7:12: 716-719.

Mrs. Weiss, a nurse with psychiatric, pediatric, and maternity nursing experience, found suburban life and caring for her artist husband and three children somewhat boring, so opened a preschool play workshop for neighborhood children. This article is a personal account of her growing interest in the cerebral palsied and mentally handicapped children whom her workshop now serves.

OCCUPATIONAL THERAPY

125. Ball, Marjorie *(Colorado State Univ., Ft. Collins, Colo.)*

Artisan therapy; a new focus on therapeutic activities, by Marjorie Ball and Paul Dotte. *Am. J. Occupational Ther.* Nov.-Dec., 1959. 13:6:257-263.

The authors describe therapy programs they observed at a rehabilitation center for injured miners in northern France. There are two workshops for artisan (occupational) therapy, a weaving room with more than 40 looms, and a woodwork shop that includes jigsaws, handsaws, and even two-man logging saws. Modifications of looms for functional therapy are illustrated.

OLD AGE

See 84; 100; 120; 134.

ORTHOPEDICS

126. Sofield, Harold A. *(715 Lake St., Oak Park, Ill.)*

Fragmentation, realignment, and intramedullary rod fixation of deformities of the long bones in children; a ten-year appraisal, by Harold A. Sofield and Edward A. Millar. *J. Bone and Joint Surg.* Dec., 1959. 41-A:8: 1371-1391.

In same issue: Medullary fixation of fractures of the forearm; a study of the medullary canal of the radius

treated with a prebent triangular nail, Fred P. Sage. p. 1489-1516, 1525.

An evaluation of results in use of the procedure in the treatment of osteogenesis imperfecta, congenital pseudoarthritis of the tibia, resistant rickets, fibrous dysplasia, and congenital shortening of the long bones. This technic to stimulate bone growth, though first exhibited in 1951 at the annual meeting of the American Academy of Orthopaedic Surgeons, is still in the experimental stage. The article is followed by a discussion by Dr. William M. Roberts of the North Carolina Orthopaedic Hospital.

Dr. Sage *(869 Madison Ave., Memphis 3, Tenn.)* describes a method of medullary fixation that appears to offer some advantages over methods previously reported. He reviews briefly the history of medullary fixation, especially that of the forearm bones, and reports research results on a study of the medullary canal, as well as experience with the first 50 patients in whom the nails have been used. Technics for insertion and extraction of the nails are described.

See also 108.

PARALYSIS AGITANS—ETIOLOGY

127. Oliver, Leslie *(Oldchurch Hosp., Romford, Essex, England)*

Parkinsonism due to midbrain compression. *Lancet.* Nov. 14, 1959. 7107:817-819.

Current views on the pathology of parkinsonism rarely mention the association of parkinsonian manifestations with tumors of the brain. In the author's experience it is most uncommon to find parkinsonism associated with intracranial space-occupying lesions; three case histories are presented. Tremor and rigidity were observed in all these patients. The author's views are supported by findings of experimental research reported in 1948 by A. H. Ward, Jr., and coworkers.

PARAPLEGIA—BIOGRAPHY

See 79.

PARTIALLY SIGHTED—SPECIAL EDUCATION

See 77; 132.

PHYSICAL EFFICIENCY

See p. 46.

PREGNANCY

128. Dimsdale, Helen *(Maida Vale Hosp. for Nervous Diseases, London, England)*

The epileptic in relation to pregnancy. *Brit. Med. J.* Nov. 28, 1959. 5160:1147-1150.

Better medical and social management of epilepsy has given the epileptic woman more opportunities for marriage. Epileptic seizures during pregnancy are not to be taken lightly, but pregnancy should not be discouraged in a woman whose epilepsy is under control. The effect of pregnancy on the epileptic is unpredictable; seizures may increase, remain unchanged, or may even be reduced, perhaps because of better therapy. The author discusses the management of the pregnant epileptic through drug therapy, diet, and other procedures.

PREMATURE BIRTH

129. Harper, Paul A. *(Johns Hopkins Univ., School of Public Health, 615 N. Wolfe St., Baltimore 5, Md.)*

Neurological and intellectual status of prematures at three to five years of age, by Paul A. Harper, Liselotte K. Fischer, and Rowland V. Rider. *J. Pediatrics.* Dec., 1959. 55:6:679-690.

This report compares the neurological and intellectual status of 460 prematures at 3 to 5 years of age with a matched group of 440 full-term children. The findings approximate those obtained from the same group of prematures examined at 40 weeks of age. Both examinations show that the prematurely born group was somewhat lower in intellectual status and had a smaller proportion classed as neurologically normal than the full-term children. Follow-up of the prematures indicated that prognosis for improvement increased with an increase in birth weight. The authors emphasize that the great majority of the prematures fall within the normal range and their distribution of intelligence ratings approximates those born at full-term, although somewhat on the low side.

PSYCHOLOGY

130. Hoedemaker, Frederick S.

The psychological problems of chronic invalidism. *McGill Med. J.* Dec., 1958. 27:4:202-215.

Normal and abnormal reactions to disability, the psychological problems of chronic invalidism, and the attitudes of chronically ill children as contrasted to those of the adult disabled are discussed more or less in the chronological order in which they arise during illness. The author believes it is necessary for the physical rehabilitation staff to handle psychological problems on a preventive basis. Knowledge of the premorbid personality of the chronically ill patient is vital in dealing with the psychological problems he presents. 24 references.

READING

131. Kennedy, Eloise *(Illinois School for the Deaf, 125 Webster Ave., Jacksonville, Ill.)*

Teaching the deaf child to read. *Am. Annals of the Deaf.* Nov., 1959. 104:5:372-382.

The special problems that retard the deaf child in speech and language development are discussed. Discussed also are methods for providing the right atmosphere conducive to learning to read. Technics in the use of preprimers for the development of concepts in verbal terms are explained step by step.

132. Nolan, Carson Y. *(Am. Printing House for the Blind, 1839 Frankfort Ave., Louisville 6, Ky.)*

Readability of large types; a study of type sizes and type styles. *Internatl. J. Educ. of the Blind.* Dec., 1959. 9:2:41-44.

Visually handicapped children are so heterogeneous as to visual disability and acuity that it is not possible to mass-produce large-type textbooks that will meet the visual requirements of all. Reading speed of 264 partially sighted children was tested with two type faces in 18- and 24-point sizes. Antique with Old Style was used as the control type for testing the readability of the experimental type face, a sans-serif type approximating metrolite medium. Findings showed that the common textbook

(control) type was read more rapidly than the experimental type and that 18-point type is read as rapidly as 24-point type.

REHABILITATION

133. Ogle, Dan C. *(Institute of Phys. Med. and Rehab., 619 N. Glen Oak Ave., Peoria, Ill.)*

Rehabilitation of disabling neuromuscular disorders. *Public Aid in Ill.* Nov., 1959. 26:11:8-12, 22.

A general discussion of rehabilitation as a specialty offering preventive, definitive, and maintenance therapy. The organization, financing, staff, and policies governing admission to the Institute of Physical Medicine and Rehabilitation in Peoria are discussed.

REHABILITATION—CALIFORNIA

134. California. Vocational Rehabilitation Service *(Calif. State Dept. of Education, Sacramento 14, Calif.)*

Rehabilitations of disabled persons over 50 years of age, 1958-59. Sacramento, The Service, 1959. 17 p. tabs. Mimeo.

Substantial increases are revealed in the actual number of persons rehabilitated in the over-50 age group served by the California Vocational Rehabilitation Service during 1958-59 as compared with persons served during the 1957-58 period. This is the second such special report giving detailed data on patient characteristics, type of primary disability, welfare status, and types and costs of services. (For the first report, see *Rehab. Lit.*, Dec., 1959, #940.)

RUBELLA

135. Ashe, John R., Jr. *(97 N. Union St., Concord, N.C.)*

Rubella in pregnancy, by John R. Ashe, Jr., and John V. Arey. *N. Carolina Med. J.* Nov., 1959. 20:11:457-462.

From a review of the literature, the authors define the characteristics of the disease that occurs in epidemic form about every three or four years. Statistics from retrospective studies have placed the risk for the development of congenital abnormalities at a high level. A method for arriving at more reliable risk figures through prospective studies is discussed. The authors question the effectiveness of gamma globulin in the prevention of anomalies. The legal aspects of therapeutic abortion are considered, as well as the religious and psychological barriers to destruction of the fetus. The paper is discussed by Dr. Robert N. Creadick, Durham, N.C.

SHELTERED WORKSHOPS—POLAND

See 85.

SOCIAL SECURITY ACT

136. U.S. Congress. House. Committee on Ways and Means

Disability insurance fact book; a summary of the legislative and administrative development of the disability provisions in Title II of the Social Security Act, prepared by the Subcommittee on the Administration of the Social Security Laws for the use of the. . . . Washington, D.C., Govt. Print. Off., 1959. 220 p. tabs.

Contains material prepared for briefing of the members of the Subcommittee, summarizing briefly the salient points of the disability program of most concern to the Subcommittee's study. It should serve as a useful reference to all those administering the disability provisions of the Social Security Act and its amendments. Extensive statistical data summarizes the statutory provisions and the operational experiences under the Act. Vocational rehabilitation aspects of the program are covered in much detail. The Chairman of the Subcommittee issuing this report is Burr P. Harrison, Representative from Virginia.

SPECIAL EDUCATION

See 78.

SPECIAL EDUCATION—MICHIGAN

137. First, Joan M. *(Box 5007, Lansing 5, Mich.)*

Providing for special needs. *Mich. Educ. J.* Jan. 1, 1960. 37:10:329-333, 364.

A description of two outstanding programs of special education provided by the Lansing Public Schools and the Oakland County school districts. Administration of the Lansing program for the mentally handicapped is discussed since it best typifies community action for meeting special needs of handicapped children. In contrast, the Oakland County program, supported by a countywide special education tax levy, has a variety of facilities and programs, including two experimental programs designed for children with behavioral problems and vocational rehabilitation needs.

Correction

In the January issue, entry #23, incorrectly identified the title for Dr. Denhoff's article through a printer's error. The full, correct entry is given below.

CEREBRAL PALSY

23. Denhoff, Eric *(Meeting Street School Children's Rehabilitation Center, Providence, R. I.)*

Spastic hemiplegia; etiology and early diagnosis, by Eric Denhoff and Raymond H. Holden. *G.P.* Nov., 1959. 20:5:153-161.

A retrospective study of the case records of 117 children. Implications are that true spontaneous type of hemiplegia with a known precipitating cause is the exception rather than the rule. Early diagnosis of spastic hemiplegia usually cannot be made on clinical signs alone; early findings should be correlated with the birth records and with developmental and psychologic progress. Pneumoencephalography need not be used except in early cases where the clinical diagnosis is unclear.

Events and Comments

Health Directory Issued by AMA

IN DECEMBER, 1959, the American Medical Association (535 N. Dearborn St., Chicago 10, Ill.) issued for its membership a *Handbook for Medical Societies and Individual Physicians on National Voluntary Health Agencies.* The booklet serves as a directory of lay and professional agencies according to disease categories and also includes other agencies of medical interest to the profession. An appendix reprints, with revisions, the "Suggested Guides to Relationships Between Medical Societies and Voluntary Health Agencies" that appeared originally in the AMA *Journal* for August 24, 1957.

OVR Research Projects Being Reported

LISTED BELOW are a number of final reports recently issued by agencies that have research and demonstration projects supported in part by grants from the U.S. Office of Vocational Rehabilitation:

Work Relationships of the Physically Impaired in a Multiple Disability Sheltered Workshop and in Standard Industry, by Jean Spencer Felton, M.D., Carol Spencer, Ph.D., and John S. Chappell, M.A. Sept., 1959. 345 p. Mimeo. Sponsored by University of Oklahoma Medical Center, Oklahoma City.

Studies of Public Assistance Referrals to Vocational Rehabilitation: I. Administrative Effectiveness: II. Predicting Outcomes. Project staff; Jack R. Parsons, Ph.D., Project Director, Joanne Thorne, David H. Gronewold, and Wilbert Fordyce, Ph.D. (no date) 70 p. Mimeo. Sponsored by School of Social Work, University of Washington, Seattle 5, Wash.

Habilitation of Mentally Retarded Youth: Part I. Manual of Operations for a Sheltered Workshop to Serve Mentally Retarded Youths; Part II. Evaluation of the Potential for Vocational Habilitation of Mentally Retarded Youths. Robert G. Ferguson, Research Director. August, 1959. 165, 103 p. Mimeo. Sponsored by the MacDonald Training Center, 3901 N. Renellie Dr., Tampa, Fla.

Occupational Conditions Among the Deaf; a Report on a National Survey Conducted by Gallaudet College and The National Association of the Deaf, by Anders S. Lunde and Stanley K. Bigman. September 1, 1959. Sponsored by Gallaudet College, Kendall Green, Washington 2, D.C. ($2.00)

Basic Accounting Procedures for Rehabilitation Centers and Facilities; a Guide for Management and Staff. January, 1960. 54 p. Also *Cost Accounting, Budgeting, and Statistical Procedures for Rehabilitation Centers and Facilities; a Guide for Management and Staff.* January, 1960. 91 p. Basil J. F. Mott, Principal Investigator. Sponsored by National Society for Crippled Children and Adults, 2023 W. Ogden Ave., Chicago 12, Ill.

Minnesota Studies in Vocational Rehabilitation: VIII, A Study of ES Applicants. September, 1959. 36 p. *(Bul. 28)* Also *IX, The Application of Research Results.* November, 1959. 21 p. *(Bul. 29)* Sponsored by Industrial Relations Center, University of Minnesota, Herbert G. Heneman, Jr., Acting Director. Single copies free from University of Minnesota Press, 2037 University Ave. S.E., Minneapolis 14, Minn.

Critical Counseling Behavior in Rehabilitation Settings, by Marceline E. Jaques, Ph.D. 1959. 115 p. Sponsored by College of Education, State University of Iowa, Iowa City. Project Director, John E. Muthard, Ph.D.

Hospital Designs Rotary Reading Aid

IMMOBILIZED PATIENTS at Mt. Sinai Hospital, New York City, use a modern version of the ancient reading scrolls in order to read popular paperback books, according to an illustrated story in the January issue of *RN.* Designed by hospital personnel is a rotary reader that the patient can control with a microswitch button. Housed in a metal box held on a stand, the reader consists of a power unit that rolls up a page at a time from a lower roller to an upper one. The pages are taped end to end, forming long rolls, which when not in use can be stored in bottle racks.

Picture Vocabulary Test Available

THE PEABODY Picture Vocabulary Test is now available through the American Guidance Service, Inc., 2106 Pierce Ave., Nashville 12, Tenn. The test was developed at George Peabody College for Teachers to meet a need for a more refined tool of this type to evaluate verbal intelligence, especially among such subjects as the cerebral palsied, speech-impaired, and the withdrawn, whose responses are impaired by psychological or physical factors. Lloyd M. Dunn, Ph.D., of the Division of Human Development of Peabody College, states that the test is also an effective measure of scholastic aptitude and verbal learning ability and that it is often given first in psychological testing because it aids in establishing rapport. The test is standardized for preschool and school children from 1 to 18 years of age and may be used with adults. No reading is required of testees and responses are nonverbal. The test may be given in less than 15 minutes. The complete test kit with 25 answer sheets for each of two forms is available for $10.00; 50 additional answer sheets for either one of the two forms may be obtained for $3.00.

New Research Directories Issued

AGENCIES and persons actively interested in research will want access to the current editions of the following publications, which list research in progress:

An Inventory of Social and Economic Research in Health. 1959. 556 p. *(8th ed.)* Health Information Foundation, 420 Lexington Ave., New York 17, N.Y.

Research Relating to Children, Reported March-July 1959. Compiled by the Clearinghouse for Research in Child Life, U.S. Children's Bureau. 1959. 158 p. *(Bull. 10.)* Order from U.S. Superintendent of Documents, Washington 25, D.C. $1.00.

Sources of Morbidity Data: Listing Number 7, 1959. Compiled by the Clearinghouse on Current Morbidity Statistics Projects, U.S. Public Health Service, Washington 25, D.C. 1959. 88 p. *(Public Health Serv. Pubn. no. 716)* Controlled distribution by The Clearinghouse.

Report of Ten-Month Field Study in Europe Soon Ready from ISWC

ADVANCE ORDERS are now being taken by the International Society for the Welfare of Cripples (701 First Ave., New York 17, N.Y.) for *The Education of Physically Handicapped Children in Western Europe,* by Wallace W. and Isabelle Wagner Taylor. This comparative study, to be published early this year, contains individual chapters on 21 countries. The article by the authors that appeared in the Sept., 1959, issue of *Rehabilitation Literature* and the series published in *Exceptional Children* are based upon this report. The prepublication price for this 200,000-word report is $3.00; after publication it will cost $3.50.

Functional Fashions for Physically Handicapped No Longer Available

ITEMS IN the catalog *Functional Fashions for the Physically Handicapped* are no longer available from Clothing Research, Inc. (new address: 400 E. 34th St., New York 16, N.Y.). Their future availability is uncertain. Mrs. Helen Cookman, who designed the clothing in the catalog is at present writing a simple, illustrated monograph incorporating her four years of specialized experience in working on the fashions in cooperation with the staff of the Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center. This summer the Institute plans to publish Mrs. Cookman's monograph, which will help the handicapped in choosing ready-to-wear garments and in making clothing or having items custom made.

Dr. Alex J. Arieff Comments on What Can Be Done for Epilepsy

"THE COMMONEST error in the handling of an epileptic is that he does not fully understand that he must remain under competent treatment, that there is no one-shot cure. If good results have been obtained from treatment, the patient or the physician may stop the medication inadvertently. Osler once said, 'In a chronic condition, one treats the patient one day at a time.'

"In at least 80 per cent of all patients adequately treated, a normal life, with no restrictions of activities, can be expected. The epileptic can eat and work like anyone else with the exception that he should not be employed in a hazardous occupation. He can make plans for the future, can marry and have children. At present, there is more hope for the patient with epilepsy or a convulsive state than there has been in many years."—*From "What Can Be Done for Epilepsy?" by Alex J. Arieff, M.D., (editorial) in* The Illinois State Medical Journal, *November, 1959, p. 278-279.*

Community Recreational Services For Handicapped Being Surveyed

THE CONSULTING SERVICE on Recreation for the Ill and Handicapped of the National Recreation Association made a questionnaire survey of 1,600 community recreation executives, asking whether they serviced the handicapped. Of the 246 responses received, none indicated well-rounded, yearly programs. Mrs. Beatrice H. Hill, Director of the Consulting Service, reports that plans are being prepared, with the help of the U.S. Children's Bureau, to study exactly how handicapped children are aided by such community services. State programs are also being developed in welfare homes that so far have had no activities at all for any residents.

H. A. Everest, Inventor Of Wheel Chair, Dies

THE INVENTOR of the light-weight folding wheel chair, Herbert A. Everest, of Los Angeles, died October 30, 1959. He had been a paraplegic for 41 years, following an injury to his spine. Mr. Everest, a mining engineer, seeking a means of earning a living during the early years of the depression, began working on a folding wheel chair. He and another engineer, Harry C. Jennings, together developed the first tubular steel wheel chair with welded joints. Their many types of chairs are now sold in practically all countries.

State Hearing Loss Centers Authorized in Pennsylvania

AUTHORITY to maintain and operate speech and hearing rehabilitation centers throughout Pennsylvania was given the state health department by legislation in 1959. During the current school year 50 workshops have been scheduled to acquaint school nurses, speech and hearing loss technicians, and administrators with the uniform standards for screening programs established by the department. Dr. L. Deno Reed, health department audiologist consultant, arranged the programs.

Two Books Now Available In Foreign Languages

AN ITALIAN translation of *Born That Way* (*Nato Così*), by Earl R. Carlson, may be obtained for $1.00 from the International Society for the Welfare of Cripples, 701 First Ave., New York 17, N.Y. A Spanish translation of *Speech Problems of Children* (*Problemas del habla infantil*), edited by Wendell Johnson, has been published by Grune & Stratton, Inc., 381 Fourth Ave., New York 16, N.Y., in a paper-bound edition.

Cincinnati Public Library Appoints Specialist For Exceptional Children

SO THAT library service can be expanded to serve children with special needs, the public Library of Cincinnati and Hamilton County, Ohio, has appointed a specialist with exceptional children, a new post unique in public library services. Miss Hilda Limper will prepare special reading lists for handicapped children, help institutions to develop special collections, and work with teachers, parents, and special groups.

Industrial Injuries Rate At All-Time Low in 1958

THE RATE for all-manufacturing injury-frequency was at an all-time low in 1958, with 10.9 disabling injuries per million man-hours worked. According to the U.S. Bureau of Labor Statistics, the 1958 experience in most industries was substantially better than in the years right after World War II. The 1958 all-manufacturing frequency rate was 45 percent below the 1946 level and 25 percent below 1949. On the basis of survey data and other information, it was estimated that a total of 1,820,000 workers were disabled by on-the-job injuries during 1958, with 13,300 resultant deaths and some degree of permanent physical impairment in 76,700. Manufacturing and trade each accounted for 340,000 work injuries, and 300,000 were attributed to agriculture.

Special Records for Exceptional Children Issued

A RECORD ALBUM suitable for young children who are deaf, mentally retarded, or cerebral palsied has just been released. *Songs for Children with Special Needs* are characterized by slower tempos, lower pitches, and fine articulation. Frances Cole, collector and editor of the songs, is music consultant for the El Monte (Calif.) School District. She is editor also for the handbook *Music for Children with Special Needs,* published in 1955 by the Southern Section of the California Association for Supervision and Curriculum Development. The album of three 78rpm plastic records, with word sheet, is distributed by Bowmar Records, Inc., 4921 Santa Monica Blvd., Los Angeles 29, Calif.

Ramp Construction Explained

HOW TO MAKE a well-built ramp is described in the Winter, 1959, issue of *The Caliper,* journal of the Canadian Paraplegic Association (153 Lundhurst Ave., Toronto). The article, illustrated by drawings, provides information on rates of incline, railings, and nonskid surfaces. For outside concrete ramps, the use of electric heating cables is explained. *The Caliper* is published quarterly at $1.00 a year.

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